Analysis of the Management Situation

Eastern Interior
Resource Management Plans:

Upper Black River Subunit
Fortymile Subunit
Steese National Conservation Area, and
White Mountains National Recreation Area

Bureau of Land Management
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Chapter 1. Introduction

1.1. Introduction

1.1.1. Purpose of and Need for the Resource Management Plan

The Bureau of Land Management's Fairbanks District Office (FDO) has determined that the two Resource Management Plans (RMPs) and one Management Framework Plan (MFP) it relies on to manage the public land and Federal mineral estate in the Eastern Interior Planning Area (planning area) need to be updated. Additionally, there are lands within the planning area that are not covered by any planning document.

Many elements of the two existing RMPs are still relevant. However, the Steese National Conservation Area RMP (BLM 1986a) and the White Mountains National Recreation Area RMP (BLM 1986b) need to be revised to respond to changing demographics, resource conditions, and policies. An RMP needs to be developed to replace the Fortymile MFP (BLM 1982) to meet BLM planning requirements, respond to changing conditions, and meet new policies. 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.

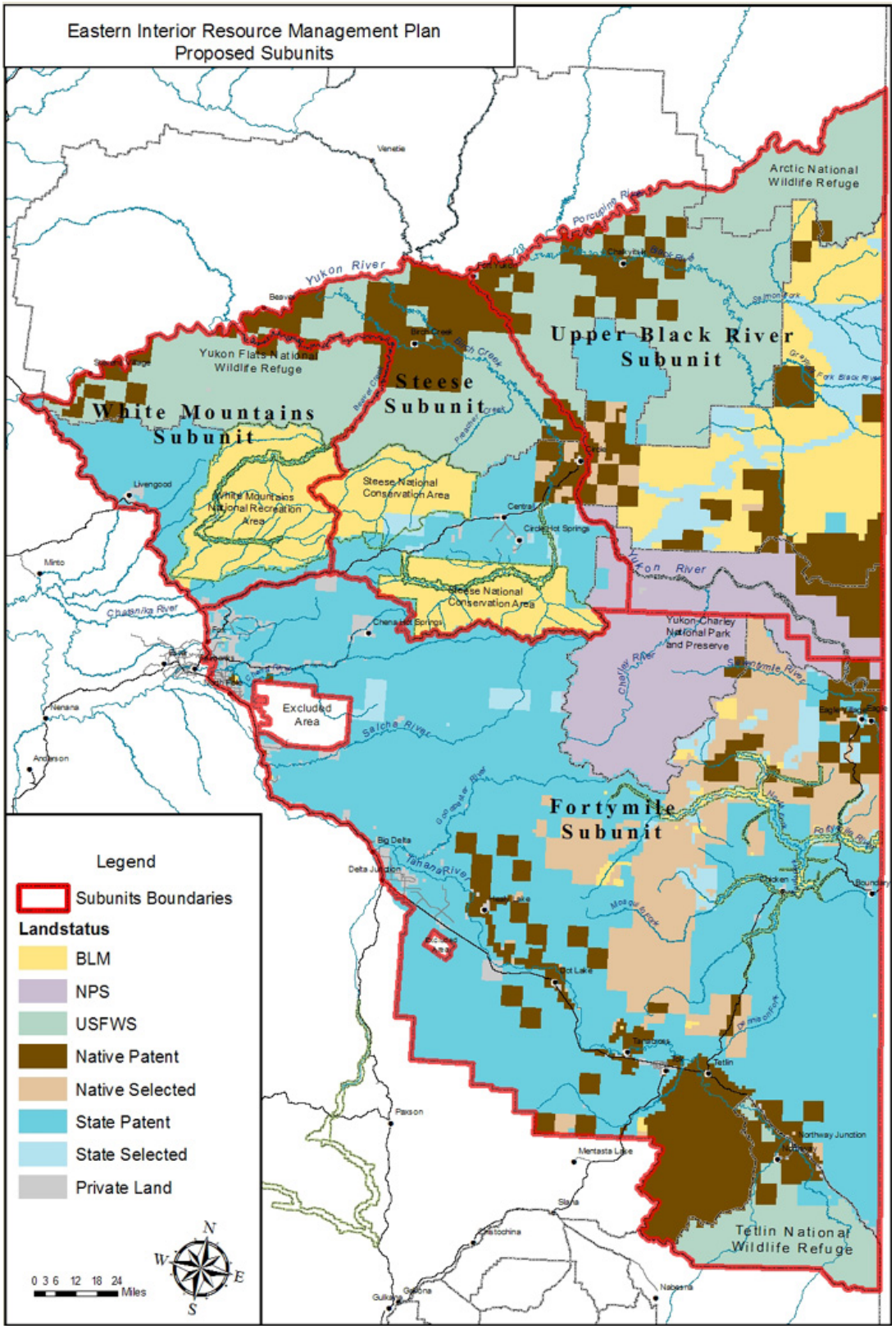
In order to reduce costs and streamline the planning process, the BLM is combining planning efforts for the Eastern Interior FO and has begun preparation of the Eastern Interior Resource Management Plans. The Eastern Interior RMPs will consist of the revised Steese National Conservation Area (NCA) and White Mountains National Recreation Area (NRA) RMPs, and the new Fortymile RMP; and the newly developed Upper Black River RMP. The Eastern Interior RMPs will provide a comprehensive framework for managing and allocating uses of public lands and resources within the boundaries of the Eastern Interior FO and portions of the Central Yukon FO as required by the Federal Land Management and Policy Act (FLPMA).

The planning area includes four distinct geographic and management subunits, corresponding to the RMP boundaries (Map 1.1). These four RMPs and associated Environmental Impact Statement (EIS) will evaluate and make land use decisions on each of these subunits. The BLM's policy (BLM 2005b, H-1601-1, page 27) requires two of the subunits, the Steese NCA and White Mountains NRA, have their own separate RMPs due to their respective status as a national conservation unit and national recreation area. Due to its remote location and lack of access, the Upper Black River Subunit will have a separate management emphasis and it will have a stand alone RMP. The Fortymile unit, which includes scattered parcels along the Alaska highway will also have its own RMP.

BLM will continue to manage public land and mineral estate in accordance with the current, unrevised RMPs and MFP until the Eastern Interior RMPs/EIS is completed and four records of decision (RODs) are signed. Four RODs will be prepared- one for the Steese Subunit, one for the White Mountains Subunit, one for the Fortymile Subunit and one for the Upper Black River Subunit (Table 1.1).

Table 1.1. Summary of Eastern Interior RMPs Planning Process

Planning Subunit	**Existing Plan**	**Planning Action**	**End Result**
Fortymile	Fortymile MFP and none	new RMP	Eastern Interior RMPs: Fortymile Subunit ROD and Approved RMP
Steese NCA	Steese RMP	RMP revision	Eastern Interior RMPs: Steese Subunit ROD and Approved RMP
Upper Black River	none	new RMP	Eastern Interior RMPs: Black River Subunit ROD and Approved RMP
White Mountains NRA	White Mountains RMP	RMP revision	Eastern Interior RMPs: White Mountains Subunit ROD and Approved RMP



Map 1.1. Eastern Interior Planning Area Subunits

1.1.2. Purpose of the Analysis of the Management Situation

The purpose of the analysis of the management situation (AMS) is to describe the current conditions and trends of the resources and the uses/activities in the planning area in sufficient detail to create a framework from which to resolve the planning issues. The AMS will help guide the development of alternatives and will help focus the planning effort on issues relevant to the planning area. Information in the AMS will be used to prepare the *Affected Environment* and *No Action Alternative* sections of the Draft EIS.

1.1.3. Planning Area Description

The planning area encompasses approximately 31.1 million acres, 8 million acres of which are BLM-administered lands in the Fairbanks District Office (Table 1.2). The area is bounded by the Brooks Range to the north, the Dalton and Elliott Highways on the west, the Fairbanks/Anchorage district boundary on the south, and the U.S. - Canada border on the east (Map 1.2). The area includes some land within northeastern portion of the Fairbanks North Star Borough, but otherwise the lands within the planning area are unincorporated. There are 13 communities in the planning area including: Fort Yukon, Birch Creek, Circle, Central, Chalkyitsik, Chicken, Dot Lake, Healy Lake, Eagle Village, Eagle, Northway, Tetlin, and Tanacross. Several other communities, including Beaver, Big Delta, Delta Junction, Ester, Fairbanks, Fox, Livengood, North Pole, Tok, and Stevens Village are adjacent to or partially within the planning area. While the area is bounded by the Elliott and Dalton highways on the West, the Alaskan Highway on the South, and has the Steese and Taylor Highways within its boundaries of the planning area, the majority of the planning area is roadless. The land status of the planning area is shown on Table 1.2.

Table 1.2. Surface Management Responsibilities/Status (land status date 8/2008)[1]

Surface Management Responsibility/Status	Acres	Percentage of the Planning Area
BLM Public Lands (unencumbered)	4,738,000	15
State Selected (BLM)	1,434,000	4.6
Alaska Native Claims Settlement Act (ANCSA) Selected (BLM)	1,768,000	5.6
Both State & ANCSA Selected	34,000	
Total BLM	**7,940,000**	25.2
National Park Service Lands	2,519,000	8.1
U.S. Fish and Wildlife Service Lands	7,505,000	24
State of Alaska Lands	10,792,000	34.5
Private (including Native ANCSA Lands)	2,544,000	8.1
BLM subsurface mineral estate (under private surface)	64,300*	
Total Lands Within Planning Area	31,300,000	
*estimated based on acres of native allotments		

[1]The GIS data set has been updated since completion of the AMS. The new land status (June 2009) will be used in development of the Draft RMP/EIS. All acreage calculations and maps in the AMS are based on the land status data set dated August 2008.

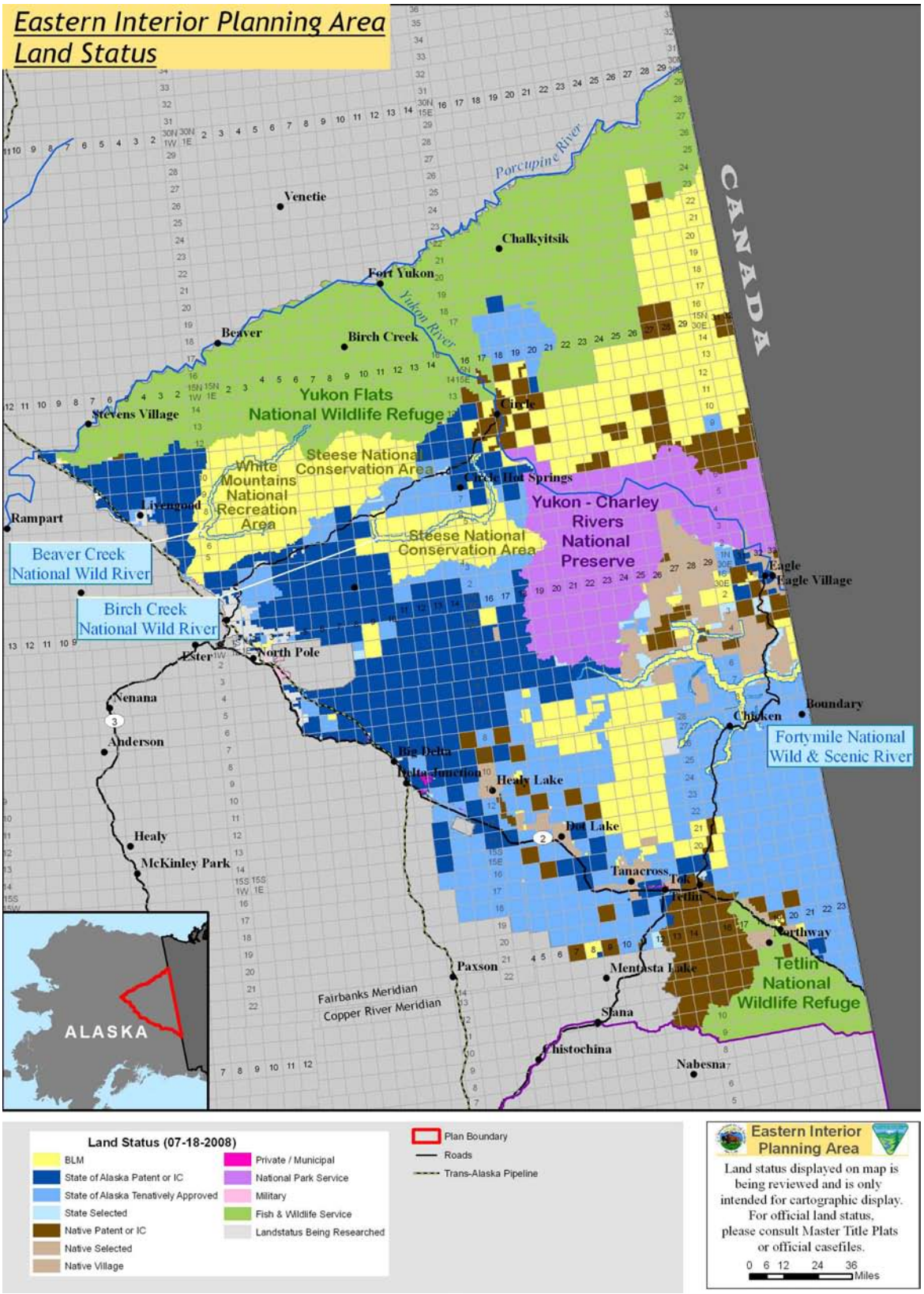


Figure 1.1. Land Status Map of Planning Area

1.1.4. Key Findings of the Analysis of the Management Situation

The 1986 White Mountains RMP and Steese RMP have served as effective guides for management of BLM-administered public lands within the planning area. However, there have been changes in BLM policy (i.e. revised Planning Handbook: H-1601-1) and changing resource conditions and demands (i.e. increased OHV use and changes in technology that were unforeseen in 1986). The Fortymile MFP is very outdated and is not an effective guide to the management of BLM lands. The Upper Black River and other lands in the planning area have no plan to guide management.

Key findings of this analysis are presented below. Indicators are factors that describe the need for changes in management. Planning actions are recommended actions to be taken during the planning process. In addition to those items highlighted below, the planning process will address management changes needed to meet program specific requirements outlined in Appendix C of the Land Use Planning Handbook (BLM 2005).

Program	Current Conditions	Indicator of change	Planning Actions
AN-CSA 17(b)(1) Withdrawals	100% of planning area is withdrawn.	Withdrawals are no longer serving the purpose for which they were intended.	Review existing withdrawals and determine if they should be modified, retained, or revoked.
Fish and wildlife	Planning area is closed to mineral location, entry and leasing through withdrawals - providing protections for natural resources.	Withdrawals may be modified or revoked opening areas to mineral entry; OHV designations may change; recreation management will change.	Identify desired habitat conditions. Identify actions and use restrictions needed to achieve desired population and habitat conditions. Identify protections for natural resources.
Land Tenure	Land status is changing due to ongoing conveyance of lands to the State of Alaska and ANCSA Native Corporations.	The conveyances are mostly complete and final selections have been made. This process has resulted in scattered, isolated parcels of BLM land that will be difficult to manage.	Using the final selection priorities, identify areas where disposal of isolated parcels of BLM land is appropriate. Develop criteria for disposal.
Livestock Grazing	There are no existing grazing permits.	No demand exists for permits; potential conflicts with wildlife, fish, and subsistence; lack of suitable grazing land.	Identify livestock grazing as an alternative considered but dropped from further analysis.
Minerals Management	Planning area is closed to mineral location, entry and leasing through withdrawals.	Areas of higher mineral potential and interest from industry indicate a need to review allocations for minerals. Current closed status provides protection for natural resources.	Review existing withdrawals and determine if they should be modified, retained, or revoked. Allocate lands as open or closed to mineral entry and leasing. Identify protections for natural resources.

Program	Current Conditions	Indicator of change	Planning Actions
Non-Native, Invasive Species	Current plans do not address this issue.	The number and extent of non-native, invasive species is increasing.	Decisions specific to the management of non-native, invasive species will be developed. Identify populations and develop management strategies through all program areas to prevent invasion and spread of these species.
Recreation and Visitor Services	Certain aspects are functioning well, particularly in the White Mountains. A new recreation market is emerging in the Fortymile Area, particularly along the Taylor Highway.	Overall increase in demand, decreasing budgets, and changes in recreation-related technologies and social and economic values of recreation. New policy to use Benefits Based Management (BBM).	Use BBM in Special Recreation Management Areas to shift the management focus from activities, programs, facilities, and projects to managing for BLM's distinctive recreation settings for desired opportunities, experiences and targeted beneficial outcomes. Establish management objectives in Extensive Recreation Management areas.
Travel Management	Some OHV designations and travel restrictions are in place. Some existing designations may no longer be appropriate. Some areas have no designations.	Conflicts between various users and impacts to resources are occurring. Changes in technology have resulted in OHVs that can travel into more remote areas.	Review OHV designations and revise if appropriate. Institute OHV designations in areas with no existing designations. Identify Travel Management areas for areas with no current designations or restrictions.
Transportation and Utility Corridors	There are six designated transportation corridors in the planning area: two in the White Mountains NRA and four in the Steese NCA.	There has been no development within five of the six designated corridors. Proposed Doyon land exchange could result in an application for a ROW outside of the existing corridors in the White Mountains NRA.	Review the six existing transportation corridors and determine if they are still needed. Determine if there is a need for any additional transportation or utility corridors.

Program	Current Conditions	Indicator of change	Planning Actions
Visual Resource Management (VRM)	VRM management classes are assigned to the Steese NCA, White Mountains NRA, and designated rivers. The remaining lands do not have VRM classes assigned.	H-1601-1 requires that BLM designate VRM management classes for all areas of BLM land.	Assign VRM management classes to all BLM-managed lands in the planning area. VRM management classes may differ from VRM inventory based on management priorities for land uses.
Wild and Scenic Rivers	There are three designated rivers in the planning area (Fortymile River, Birch Creek, and Beaver Creek), each with a river management plan developed in 1983.	The river management plans are over 25 years old. Some of the decisions may no longer be appropriate. Outstandingly remarkable values were never identified for these rivers. H-1601-1 requires BLM to assess all eligible river segments and determine which are suitable per section 5(d)(1) of the Wild and Scenic Rivers Act.	Review river management plans and determine if the RMP will amend the plans, adopt them in their entirety, or recommend development of a new river management plan after the RODs are approved. Determine if outstandingly remarkable values for the Fortymile River, Beaver and Birch creeks should be designated through the RMP or through a river management plan. Conduct a Wild and Scenic Rivers determination process during the RMP process for those river segments that have not been previously designated, or have not undergone a Wild and Scenic Rivers review process.
Wilderness Characteris-tics	None of the existing land use plans address wilderness characteristics.	H-1601-1 requires that the RMP identify lands with wilderness characteristics.	Review lands within the planning area for wilderness characteristics. Determine which, if any, areas should be managed to preserve the wilderness character.

Chapter 2. Area Profile

This chapter describes the area profile, which is the existing condition of resources, resource uses, and other features in the Planning Area. The information will become the basis for the Affected Environment chapter of the RMP/EIS.

2.1. Resources

2.1.1. Air Quality

Climate

Climate of the Eastern Interior planning area is continental-subarctic, characterized by long exceptionally cold winters, short relatively warm summers, low annual precipitation, low humidity, and variable winds (Baily, 1980). Microclimate conditions within the planning area are influenced by variations in elevation, topography, and cloud cover. Annual precipitation usually varies from about 10 to 30 inches annually 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. Summer thunderstorms are common over the hills and upland areas. Climate strongly influences fire severity and frequency, with the greatest aerial extent of burning occurring in the hottest, driest years. Summer maximum temperatures range from the upper 70s °F with extreme readings in the 90s. Winter temperatures may be minus 50°F or lower for 2 or 3 weeks at a time (Western Regional Climate Center, 2006). 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.

Because of the high latitude environment, the planning area experiences 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 4 hours in winter to more than 20 hours in summer. Lowlands in the planning area, such as the Yukon Flats, experience frequent temperature inversions in winter (Western Regional Climate Center, 2008). Fairbanks, along the western border of the planning area, has some of the world's strongest inversions, sometimes 30° to 40°F colder at ground than at several hundred feet above ground (Davis, 1976). Ice fog forms from water vapor at temperatures colder than minus 30°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.

Several agencies report climate data from stations within or near the planning area. The National Weather Service (NOAA), publishes monthly climatological data for stations throughout Alaska (http://www.arh.noaa.gov/). The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), has telemetry-equipped air temperature and precipitation measuring devices at several sites within the planning area (http://ambcs.org/statemap.htm). NRCS also collects snow-depth and snow-water content data for Alaska (http://www.ak.nrcs.usda.gov/Snow/snowsites.html). The Alaska Fire Service, BLM operates several Remote Automated Weather Stations (RAWS) in the planning area. They are actively maintained during the fire season with minimal maintenance during the fall, winter and

spring. Data from the RAWS stations provide valuable information and confirmation with regard to location, duration and intensity of rainfall events. Current RAWS data is available from the BLM Alaska Fire Service web page (http://fire.ak.blm.gov/predsvcs/weather.php). Historical RAWS data can be obtained from the Western Regional Climatic Center, Reno, Nevada.

Regional Profile

Because much of the planning area is remote and largely undeveloped, air quality is generally pristine. Nonetheless, regional and local air quality is periodically affected by local, regional, and global natural events and anthropogenic activities. Alaska has various sources of natural pollution including wind blown dust, ash from volcanic eruptions, and smoke from forest fires. Although natural in source, these forms of pollution may impair visibility and adversely affect public health. The main contributors to man-made air pollution in Interior Alaska are incomplete burning of fossil fuels from motor vehicles and heating, as well as smoke from wood stoves. Community power plants also contribute to air pollution. All of these forms of anthropogenic and natural air pollution impair visibility and occasionally impact public health.

The aerial extents of each of 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; strong winter inversions increase the local concentration of fine particle (PM2.5) emissions from wood stoves. High altitude Arctic haze persists in spring and originates as dust, smoke, and man-made pollution from Asia and Europe. 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 (Associated Press, 2008).

Summer wildfires from lightening strikes are common. Associated smoke cover can severely limit local and regional visibility, airborne particulate concentrations may reach health hazard levels, and wildfire odors can attain nuisance levels. Depending on atmospheric conditions, smoke and ash from large wildfires outside of Alaska may be transported great distances, adversely affecting air quality within the planning area. Wildfire 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. During mid January to early February 2006, a series of explosive eruptions occurred at the Augustine volcanic island off the southern coast of Alaska. By early February a plume of volcanic ash was transported northward into the interior of Alaska (Sassen and others, 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 June and September eruptions events deposited significant amounts of ash in Interior Alaska (Neal and others, 1995). Records of historic ash-fall deposits demonstrate potential for substantial future volcanic ash-fall events in Interior Alaska. Mt. Churchill, in Wrangell-St. Elias National Park, first exploded about 1,900 years ago, followed by a second much larger explosion about 1,200 years ago (Richter and others, 1995). In total, the volcanic ash from Mt. Churchill covers about 208,000 square miles of land in Alaska and northern Canada - ash from the first deposit was blown north as far as Eagle, Alaska (Robinson, 2001). Ash layers up to two feet thick can be seen just below the surface in many roadcuts along the Alaska

Highway (Wikipedia, 2008). Mt. Churchill is located about 100 miles south of the southeast border of the planning area.

Wind erosion and transport of dust occasionally impacts 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 odor and visibility. 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.

Dust particles (silt) from glacial-fed river floodplains may be suspended during wind events and transported downwind, periodically 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 in the planning area, and in communities without paved roads. Dust impacts to air quality in local communities in the planning area are not known.

2.1.1.1. Indicator

Under the Federal Land Policy and Management Act (FLPMA) and the Clean Air Act, the BLM cannot conduct or authorize any activity that does not conform to all applicable Federal, tribal, state, and local air quality laws, statutes, regulations, standards, and implementation plans. The Clean Air Act, as amended in 1990, requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) (40 CFR part 50) for pollutants considered harmful to public health and the environment. The following NAAQS information was summarized from EPA web site http://epa.gov/air/criteria.html. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The EPA Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards for six principal pollutants, referred to as "criteria" pollutants. These are listed in Table 2.1. Units of measure for the air quality standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m3), and micrograms per cubic meter of air (µg/m3).

Table 2.1. National Ambient Air Quality Standards

	Primary Standards		**Secondary Standards**	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour(1)	None	
	35 ppm (40 mg/m^3)	1-hour(1)		

	Primary Standards		Secondary Standards	
Pollutant	**Level**	**Averaging Time**	**Level**	**Averaging Time**
Lead	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 µg/m^3)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM10)	150 µg/m^3	24-hour(2)	Same as Primary	
Particulate Matter (PM2.5)	15.0 µg/m^3	Annual(3) (Arithmetic Mean)	Same as Primary	
	35 µg/m^3	24-hour(4)	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour(5)	Same as Primary	
	0.08 ppm (1997 std)	8-hour(6)	Same as Primary	
	0.12 ppm	1-hour(7) (Applies only in limited areas)	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m^3)	3-hour(1)
	0.14 ppm	24-hour(1)		

(1) Not to be exceeded more than once per year.

(2)Not to be exceeded more than once per year on average over 3 years.

(3)To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m3.

(4) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m3 (effective 12/17/2006).

(5)To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective 05/27/2008)

(6) (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm. (b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

(7) (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1. (b) As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone nonattainment Early Action Compact (EAC) Areas.

Section 162 of the Clean Air Act (CAA) established the goal of Prevention of Significant Deterioration (PSD) of air quality in all international parks; national parks which exceeded 6,000 acres; and national wilderness areas and memorial parks which exceeded 5,000 acres if these areas were in existence on August 7, 1977. These areas were defined as mandatory Class I areas, while all other attainment or unclassifiable areas were defined as Class II areas. PSD Class I areas

are areas where any appreciable deterioration of air quality would be considered significant. Class II areas are those where moderate, well-controlled growth, as well as some deterioration of air quality could be allowed. Under criteria established through the "Clean Air Act," the planning area is designated as a Class II area. Class III areas are those designated by the governor of a state as requiring less protection than Class II areas. No Class III areas have yet been so designated.

Air quality is monitored in Denali National Park, a Class I air-quality area, about 200 miles southwest of the Eastern Interior Planning Area. The NPS air quality monitoring network maintains a website (http://www2.nature.nps.gov/air/) that provides an overview of sample design and methods, as well as public access to validated data. National Park Service air quality data can be used as an indicator of regional air quality and may be broadly representative of air quality in the planning area.

The Alaska Department of Environmental Conservation (ADEC) – Division of Air Quality implements the Clean Air Act in Alaska. The ADEC is responsible for maintaining compliance with Prevention of Significant Deterioration (PSD) Increments and National Ambient Air Quality Standards (NAAQS). The ADEC may set state ambient air quality standards that are equally or more stringent than the Federal NAAQS but has not done so. ADEC air quality data for Fairbanks can be used as an indicator of regional air-quality issues and may be broadly representative of air quality in the planning area.

Approximately 250 miles southeast of the planning area, air quality is monitored in Whitehorse, Yukon Territory. Yukon Department of the Environment air-quality data can be used as an indicator of regional air quality and may be broadly indicative of general air quality in the planning area.

2.1.1.2. Current Condition

There are no air quality monitoring stations in the planning area. Based on regional monitoring in Fairbanks, Denali National Park, and Whitehorse, Yukon Territory, and reports from agency personnel, existing air quality in the planning area is generally excellent. Air pollution emission sources are limited to a few urban areas along the southwest border of the planning area, including Delta Junction, North Pole, and Fairbanks. Residential emissions occur in several small towns and villages within the planning area. Within the planning area, vehicle emissions occur along the Alaska, Steese, and Taylor highways, and Chena Hot Springs Road. The Richardson, Elliot, and Dalton highways are major transportation corridors along the west central border of the planning area. According to USFWS (2008), 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.

2.1.1.3. Trends

Trends in Fairbanks

According to the ADEC Air Quality Plan for 2008, Fairbanks continues to experience strong winter inversions which trap and concentrate air pollution and was designated "Serious Non-attainment" for Carbon Monoxide (CO) in the late 1990s, but has since had several years

of clean CO data. None of the Fairbanks monitoring sites violated the ambient CO standard during the past three years.

The Fairbanks Coarse Particulates PM10 monitoring sites were installed in the late 1980s to investigate wood smoke concerns. Despite monitoring at several locations, the monitoring program did not find significant levels of coarse particulates.

Fairbanks has consistently experienced the highest Fine Particulate PM2.5 values measured in the state. During the summer months when wildland fires spread thick grey smoke over Interior Alaska, the Fairbanks area is inundated with very high fine particulate levels. During the summers of 2004/05, the community suffered through days with particulate levels that were more than 10 times the old standard of 65 µg/sm3 (ADEC 2008). At times, smoke from these fires covered most of Interior Alaska from the Bering Sea east to the Canadian border. During the winter months, Fairbanks' strong winter inversions have contributed to concentrating local fine particle emissions. Based on winter PM2.5 levels, Fairbanks had been close to exceeding the annual fine particulate standard (set at 15 µg/sm3) for the past seven years. To address the needs of a state PM2.5 State Implementation Plan, the Fairbanks North Star Borough is expanding their monitoring network to better identify the magnitude, extent and source of their winter PM2.5 problem. This effort will see the addition of between three and five new monitoring sites operated during the winter months. Borough staff continues to operate the three CO sites.

Portions of rural Interior Alaska may also have a PM2.5 wood smoke problem. Strong winter inversions coupled with weak economies, higher home heating bills, and easy access to wood have resulted in increased woodstove use. The impact on these small communities is unknown at this time. ADEC is in the process of evaluating the impact of diesel emissions from power generators on the residents of small rural Alaskan communities.

Trends in Whitehorse

Although gaps in historic data exist due to equipment failures, the available information suggests that Whitehorse, Yukon Territory air is generally quite clean in relation to national air quality standards. Annual total suspended particulate matter (TSP) averages continue to be well below the national annual maximum acceptable objective established by Health Canada (1988) Canadian Air Quality Standards. However, there were two incidences in both 1998 and 1999 where the acceptable 24- hour level for TSP was exceeded.

With the exception of 1998 and 2000, there has been a trend towards lower levels of carbon monoxide (CO) in Whitehorse air during the month of December in the past five years. Years with decreased levels of carbon monoxide are likely linked to warmer weather, when less firewood is burned and vehicle engines are not kept running for extended periods of time (Yukon Department of Environment 2002). Monitoring of nitric oxides has been sporadic, and there is not enough data on ground level ozone and fine atmospheric particulates (PM2.5) to make any justifiable conclusions on trends. The City of Whitehorse has enacted a bylaw that requires the use of low emission wood burning stoves (EPA approved) within city limits (Yukon Department of Environment, 2002).

Trends in Denali Park

Denali National Park is a Federal Class I air-quality area and is an IMPROVE monitoring site. The national visibility goal was established in section 169A of the Clean Air Act as

"the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Federal Class I areas which impairment results from man-made air pollution" (http://www.epa.gov/visibility/report/index.html). The particulate matter that most affects visibility in mandatory Federal Class I areas has an aerodynamic diameter less than 2.5 microns. Although particulate matter less than 2.5 microns (PM2.5) is often composed of numerous chemical species, chemical analyses have been used to identify and group five key contributors to visibility impairment: sulfate, nitrate, organic carbon, elemental carbon, and crustal material.

Measurable amounts of both current use and historic (banned in the U.S.) contaminants (e.g., DDTs, dieldrin, chlordanes) were found in snow, water, vegetation, fish and lake sediment in, Denali, Gates of the Arctic, and Noatak parks by the Western Airborne Contaminants Assessment Project. Concentrations of anthropogenic airborne contaminants, while low, show a strong seasonal trend, with peaks often occurring in the winter and early spring. This pattern is consistent with international transport of airborne contaminants to Alaska via transport pathways over the Arctic and Pacific oceans (Wilcox 2001).

There are no known noise ordinances/stipulations or noise monitoring for communities in the planning area nor are there known odor restrictions or monitoring programs for communities in the planning area. Nevertheless, BLM should include guidance on noise and odor for the planning area similar to ADEC guidelines “Any person who shall cause or allow the generation of any noise/odor from any source which may unreasonably interfere with the use and enjoyment of BLM lands must use recognized good practices and procedures to reduce these noise/odors to a minimum.”

2.1.1.4. Forecast

Increasing population and development will likely stress the local, regional, and global air resources due to increased air emissions from vehicle internal combustion engines, burning of wood and fossil fuels, and industrial facilities that emit a broad spectrum of chemical by-products into the air. It is anticipated that the Interior Alaska region and the Eastern Interior Planning Area will continue to have population growth and a corresponding increase in commercial, residential, and industrial development, which will exert increased demands on the regional air resources.

Alaska and the planning area generally have pristine to very high quality air resources, however, land use analysis should carefully consider the impacts of proposed actions on the air resources to protect and preserve this resource. Under the current BLM management, no significant deterioration of air quality from BLM permitted actions is anticipated. Activities on BLM lands are analyzed according to the National Environmental Policy Act (NEPA). As part of this analysis, impacts on air resources are evaluated. Activities that would adversely impact air resources or not be in compliance with Federal laws, regulations, and policies, would not be approved, and or must be altered. According to the Clean Air Act, a “conformity applicability” process is used to evaluate if a proposed action is subject to the air conformity regulations. If the conformity regulations are applicable to the proposed action, a “conformity determination” may be incorporated into a concurrent NEPA document.

2.1.1.5. Key Features

Other than periodic smoke and associated particulate matter from summer wildfires, the air quality in the planning area is generally excellent and in attainment with NAAQS and State of Alaska Air Quality Standards.

2.1.2. Soil Resources

Regional and Area Profile

The Soil Resources program is responsible for protection, restoration and enhancement of soils on BLM-managed lands. Inventory and monitoring are the typical means used to assess the condition of the resource. For all authorized activities in the area, site specific stipulations mitigate to the extent possible potential sources of soil degradation such as road building, mining, and off-road vehicle (OHV) use.

Soils in the planning area have been surveyed on a very broad scale in the *Exploratory Survey of Alaska*, (USDA 1979). This survey is best used for general land use planning and as a guide for areas to avoid for developmental purposes. Map units are very large and lacking in detail. 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). Nonetheless, soils in the planning area can be broadly characterized based on physical characteristics and generally classified using soil taxonomy outlined in Soil Survey Staff (1999). At least 3 soil orders are found in the planning area: Entisols, Gelisols, and Inceptisols. Brabets and others (2000) described these soils and their respective suborders in their environmental and hydrologic review of the Yukon River watershed, which encompasses the planning area.

Entisols—These are recently formed soils with little soil horizon development and are found in areas of glacial outwash or alluvium , e.g., in the Yukon River Basin.

Gelisols—These are soils that have permafrost within about 40 inches of the soil surface and (or) have gelic materials within about 40 inches of the soil surface and have permafrost within about 80 inches. Gelic materials are mineral or organic soil materials that have evidence of frost churning in the active layer (seasonal thaw layer) and (or) in the upper part of the permafrost.

Inceptisols—These are recently formed soils but, in contrast to Entisols, have a greater degree of soil horizon development. At the present time, some Inceptisols (*Andic Cryochrepts, Typic Cryochrepts*) have some characteristics of Gelisols and are classified as "Inceptisols/Gelisols."

Soil is a mixture of organic matter and geologic parent material altered by physical and biological processes. In the Yukon River watershed, type of parent material, climate, and relief have been the most dominant factors in the development of soils (Brabets and others, 2000). 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 9 feet adjacent to rivers and decreased gradually over 10-20 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 and others (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, 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. Weakly developed soils without permafrost on well-drained south-facing slopes are classified within the Inceptisol order. In the lowlands, permafrost underlies much of the landscape except major river terraces, alluvial fans, and active floodplains. Organic soils underlain by permafrost are classified as belonging to the *Histic* suborder of Gelisols. Black spruce often dominates the north-facing slopes and lowlands.

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.

2.1.2.1. Indicator

Soil resource objectives outlined in the *BLM Alaska Statewide Land Health Standards* (BLM 2004) include: (1) Protect the soil surface from erosion; avoid detention of overland flow; maintain infiltration and permeability that are consistent with the potential/capability of the site; and (2) Promote moisture storage by soil and plant conditions consistent with the potential/capability of the site. When functioning properly within its capability, a watershed captures, stores, and safely releases the moisture from normal precipitation events (equal to or less than the 25-year, 5-hour event) that occur within its boundaries. Possible success indicators are:

- amount and distribution of plant cover (including forest canopy cover)
- amount and distribution of permafrost
- soil temperature/depth profile
- soil moisture
- amount and distribution of plant litter
- accumulation/incorporation of organic matter
- amount and distribution of bare ground
- amount and distribution of rock, stone, and gravel
- plant composition and community structure
- thickness and continuity of the first layer of soil containing organic matter
- character of micro-relief
- presence and integrity of biotic crusts
- root occupancy of the soil profile
- biological activity (plant, animal, and insect)

Designated indicators are used to determine if the standards for soils are being met. In the Eastern Interior Planning Area the distribution of permafrost soils impose limitations for construction of roads and facilities due to unstable freeze-thaw conditions. Permafrost is defined as soil, sand, gravel, or bedrock that has remained below 32ºF for two or more years. Permafrost can exist as massive ice wedges and lenses in poorly drained soils or as a relatively dry matrix in well-drained

gravel or bedrock. Permafrost forms a barrier that prevents infiltration of surface water, and maintains a saturated layer of surface soils. Surface disturbance can cause melting of the ice-rich permafrost, which results in surface subsidence, or thermokarst, creating thaw lakes, ponds, or gully erosion channels. Removal or destruction of the surface organic layer overlying permafrost areas will typically increase heat flow, causing permafrost thawing and resulting in erosion, surface slumping, and/or thermokarst formation where ice lenses or wedges are found.

2.1.2.2. Current Condition

Most soil resources in the Eastern Interior Planning Area are largely in natural condition with minimal human-made disturbance. The planning area is sparely populated with few commercial facilities, few roads, and no large scale commercial crop, livestock, or grazing activity. Extensive wildfires 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 a majority of the large-fire activity occurring in central and eastern Interior Alaska (National Climate 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 weight restrictions of 1500 pounds on OHV use, increased hunting and recreational activities have adversely impacted soils in areas near the Steese and Taylor highway corridors. Seasonal OHV travel restrictions and possible trail closures may be warranted in some areas. Soil monitoring and revaluations continue, not only on OHV trails, but also for other resource exploitation that creates surface disturbance, such as mining. The major soil resource management concerns are soil subsidence, thermokarst, and erosion, especially in permafrost areas where the insulating organic material has been severely damaged or removed.

2.1.2.3. Trends

Alaska Statewide Land Health Standards (BLM 2004) will continue to be an important method of evaluating the condition of soils in the planning area. In addition, a revised BLM technical reference, 1734-6, Version 4-2005, directs the implementation of land health monitoring. This reference calls for a greater emphasis on matching land health evaluation areas to the appropriate ecological site and its related soils. In particular, evaluation of site stability should include evaluation of the "capacity of an area to limit redistribution and loss of soil resources (including nutrients and organic matter) by wind and water." Consequently, the identification of soils and subsequent site stability evaluation will likely require more detailed soils survey information.

The use of modern OHVs for hunting, transportation, and recreational activities has substantially increased since the 1980s. The use of OHVs on unhardened trails can cause severe damage to plants and increase soil erosion. The impacts should be mitigated by constructing hardened trials using geotextiles or other materials, and implementing seasonal vehicle restrictions and closure of unauthorized trails.

2.1.2.4. Forecast

Large-scale changes to soils management are not anticipated in the near future. Maintaining current soil resources will likely continue to be a priority. General resource protection measures should continue to prevent undue soil erosion and sedimentation of area streams and rivers, whenever possible.

The State of Alaska 303 (d) list for impaired waters may alter policy on soils management by listing streams for sediment input if mining or access route development results in degraded water quality of area watersheds. As public use increases in the planning area, general resource protection measures will be utilized to minimize soil loss and productivity, as well as adhering to Land Health Standards. Additional monitoring and management actions may be warranted in areas adjacent to the 303(d) listed upper Birch Creek.

Currently much of the planning area is open to unrestricted use of OHVs, with the exception of a permit requirement for vehicles over 1,500 pounds. Increased OHV use is expected and could be accommodated by restricting OHV use to specific trails or corridors. Increased mining activity as well as exploration and development of hydrocarbon resources in the Yukon Flats would result in additional disturbance of soils.

2.1.2.5. Key Features

To the greatest extent possible, new access routes, new trails, and new sites for facilities should be located on non-permafrost soils.

2.1.3. Water Resources

Regional and Area Profile

The Soil, Water, and Air Program is responsible for protection, restoration and enhancement of water resources on BLM-managed lands. Inventory and monitoring are the typical means used to assess the condition of the resource. *BLM Alaska Statewide Land Health Standards* (BLM 2004) call for BLM to maintain or improve water quality, water quantity, and timing and duration of flow. The water quality goal is to ensure that surface water quality (to the extent that BLM actions can influence water quality in the area) complies with state water quality standards. State of Alaska Water Quality Standards were set forth under state law in Alaska Administrative Code (AAC) Statewide Standards (18 AAC 70.005 - 18 AAC 70.050) as amended July, 2008. Approximately 12,000 miles of streams and rivers and 40,000 acres of lakes and ponds are present on BLM-managed lands in eastern Interior Alaska. Timing and duration of stream flow are weather dependent; there are no major reservoirs or diversions on Interior Alaska streams.

Many factors affect the quality of water resources. Sources of pollution, including sediment, affecting water quality are usually classified as point sources or non-point sources. Point-source pollution originates from a direct source such as permitted discharge from water treatment plants or mining operations, or direct runoff from construction projects. Non-point source pollution originates from diffuse sources including urban area runoff, atmospheric deposition, and broad areas where vegetation has been removed or severely impacted. Mitigation of non-point source pollution is often difficult. Mitigation of point source pollution is usually straightforward. In Interior Alaska, runoff containing sediment and/or other pollutants occurs during spring snowmelt and heavy rainfall events in summer and fall. Surface water and soils are frozen in winter. 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. By focusing on land health standards (i.e. upland soils, vegetation, riparian conditions, and water quality), the BLM can ensure its permitted land use activities are not degrading water quality.

The planning area is entirely within the upper portion of the Yukon River Basin. Major rivers in the planning area are listed in Table 2.3 and shown in Map 2.2 Major Rivers in the Planning Area. 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 14ºC. 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% of peak summer flows. Ice on lakes and larger streams is normally about 4 feet thick by March.

Three streams in the planning area were included in the Wild and Scenic Rivers System by ANILCA (P.L. 96-478); the Fortymile National Wild and Scenic River (NWSR), Birch Creek National Wild River (WR), and Beaver Creek National Wild River (WR). When these rivers were designated as components of the National Wild Rivers System, Congress intended they would be preserved in a free-flowing condition, and that the river and its immediate environment would be protected for the benefit and enjoyment of present and future generations. River segments within the Fortymile NWSR Corridor (Figure 2.1.4-2) were designated as “wild,” "scenic," or "recreational.” Approximately 126 miles of upper Birch Creek (Map 2.1 Hydrography and WSR Corridors) and 127 miles of upper Beaver Creek were classified and designated as "wild." By classifying Birch and Beaver creeks as “wild” Congress mandated that they “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 National WR flows through the Steese National Conservation Area (NCA). Special values to be considered in planning and management of the NCA are caribou habitat and Birch Creek (ANILCA Section 401). Beaver Creek is a primary recreation attraction in the White Mountains National Recreation Area (NRA).

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. Extensive sections of stream channel and flood plain in the Birch Creek and headwaters of Beaver Creek watersheds have ongoing reclamation efforts. 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. A Total Maximum Daily Load (TMDL) is then required for the stream segment. In 1996, the EPA issued a TMDL for total suspended solids to meet water-quality standards in Upper Birch Creek of 20 mg/L. Several tributaries in the Birch Creek drainage are listed in Section 303(d) as impaired waters because they exceeded water-quality criteria for turbidity (Alaska Department of Environmental Conservation, 2006). Upper Birch Creek is the only stream on BLM-managed land listed on the State of Alaska’s 303d list of impaired waterbodies. Recent strict enforcement of water quality standards for placer mine operations has improved water quality (turbidity) downstream of active mines. A site can be removed from the 303(d) list if, through remediation or restoration activities, the state water-quality standards are attained. BLM, in cooperation with the U.S. Geological Survey (USGS) and other Federal and state agencies, monitors stream flow and water quality of selected streams within the Eastern Interior Planning Area.

2.1.3.1. Indicator

The water quality standards for the State of Alaska are the standards ADEC uses in order to protect, maintain, or improve surface water resources in Alaska. These standards support other Federal laws such as the Clean Water Act (CWA) of 1977, the Water Resources Planning Act of 1962, the Pollution Prevention Act on 1990, and the Safe Drinking Water Act of 1977. The Alaska water quality standards are used to ensure the protection of the beneficial uses of water including cold water fisheries, recreation, and agriculture. Alaska BLM adopted these water quality standards to protect public health and welfare and enhance the quality of the water on public lands within the State of Alaska. ADEC Water Quality Standards (18 AAC 70), amended as of July 1, 2008, for 1) Drinking Water, 2) Water Recreation-contact recreation, and 3) Water Recreation-secondary recreation are summarized in Appendix E - "ADEC Water Quality Standards for Designated Uses."

BLM Alaska Land Health Standards (BLM 2004) lists possible water quality success indicators as:

- water temperature
- dissolved oxygen
- fecal coliform
- turbidity
- pH
- populations of aquatic organisms
- effects on beneficial uses (i.e., effects of management activities on beneficial uses as defined under the CWA and state regulations)
- specific conductivity
- water chemistry, including nutrients and metals
- total sediment yield including bed load
- levels of chemicals in bioassays
- change in trophic status

The water quality parameters typically measured by BLM and other agency personnel include stream flow, water temperature, dissolved oxygen, pH, specific conductivity, and sediment (turbidity). The ADEC criteria for each of these indicators are displayed in Appendix E. Water-quality field parameters provide information on the aquatic environmental conditions. Changes in these characteristics along a stream reach or over time can help identify degraded habitat. Table 2.3 shows these parameters for major streams in the planning area.

Water Temperature

Water temperature is a limiting factor for distribution and abundance of aquatic organisms. Many aquatic species can only inhabit and reproduce successfully within a specific range of water temperature. Elevated water temperatures can be harmful or lethal, isolate species by creating a thermal migration barrier, and decrease the amount of dissolved oxygen (DO) in the water. In Interior Alaska, the increase of water temperature in summer is primarily an effect of increased solar radiation but may also be influenced by lack of overhead vegetation, decreased amounts of spring and groundwater water discharge, and low precipitation. Temperatures in streams not frozen in winter are generally near freezing from the fall through the spring and increase only in the summer.

Dissolved Oxygen (DO)

Aquatic species require a certain amount of DO in surface water to perform biological functions such as respiration, and successful reproduction. Low amounts of DO can limit the distribution of aquatic species or can be lethal at substantially reduced levels. Potential sources of low DO levels include high water temperatures, decreased surface water flows, elevated nutrient levels, and high suspended solids.

Nutrients

Nutrients can increase the productivity of surface water in rivers and streams. This increase in productivity can lead to large algal blooms that rapidly reduce DO levels and decrease the visual value of a body of water. Increased nutrients may be derived from agricultural sewer/septic effluent discharge into the water system. BLM generally does not collect data on aquatic nutrient levels within the planning area as most streams and lakes have naturally occurring low nutrient levels.

Sediment

Fine sediments in the water can increase the amount of turbidity and suspended solids and contribute to increased water temperatures, decreasing DO, and detrimental impacts to fish and other aquatic organisms. As the suspended solids settle on the streambed, fine particles can accumulate and cover gravel and cobble on the streambed. This decreases the amount of available spawning habitat for fish. Excess deposition of fine particulates reduces the amount of habitat available for aquatic insects and other macroinvertebrates. Sediment is a limiting factor for water quality in the planning area. Potential sources of sediment included abandoned placer mine-tailings, increased OHV use, dirt roads and drainage ditches, and areas burned by wildfire.

pH

The pH of water is a measure of its hydrogen-ion activity and can range from 0 (acidic) to 14 (alkaline) standard units. River water in areas not influenced by contaminants generally has a pH in the range 6.5 to 8.5 (Hem, 1985).

Specific Conductivity

One metric for impurities in water is to measure the electric conductivity (specific conductivity) of water. Specific conductivity is a measure of total dissolved solids (TDS) - the amount of mineral and salt impurities in the water. As ion concentrations (impurities) increase, specific conductance of the solution increases. The ADEC Water Quality Standard for impurities is listed as TDS, reported in parts per million (ppm). Specific conductance is measured in mircosiemens per centimeter (uS/cm) and most conductivity data is reported in uS/cm. The conversion factor of 0.67 x (uS/cm) is commonly used to convert measured conductivity to TDS; [(TDS) ppm = Conductivity µS/cm x 0.67]. The ADEC TDS standard tells how many units of impurities there are for one million units of water. For example, drinking water should be less than 500 ppm, equivalent to specific conductance of about 750 (uS/cm).

2.1.3.2. Current Condition

The four planning subunits are associated with four watersheds; the Black River watershed, the Steese NCA-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 2.2), based on available data. Water

quality parameters of temperature, pH, DO, and conductivity are well within State of Alaska water quality standards. However, land-use practices on lands not under BLM management affect water quality on BLM-managed land. Many of the water courses within the planning area flow through private, Native corporation, State, and other federally managed lands. In many cases, BLM can only address water quality related issues that arise from activities on BLM-managed land.

Table 2.2. Discharge and water quality parameters of major streams in the Eastern Interior Planning Area [mm/dd/yyyy = month, day, year; ft3/s, cubic feet per second; °C = degrees Celsius; mg/L = milligrams per liter; µS/cm = micro Siemens per centimeter]

Site Name	Date (mm/dd/yyyy)	Agency	Discharge (ft^3/s)	Water Temp (C)	pH Standard Units	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm)
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
Charlie 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*	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

Site Name	Date (mm/dd/yyyy)	Agency	Discharge (ft^3/s)	Water Temp (C)	pH Standard Units	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm)
Dall River	9/4/2002	USGS	206	9.8	7.32	10	104
Yukon River near Stevens Village	9/4/2002	USGS	253,000	11.3	7.8	9.9	213
ADEC Standard				**< 15**	**6.0 - 8.5**	**> 4.0**	**750**
*Birch Creek above 12 Mile Creek is sec. 303d listed for sediment							

Water quality (turbidity) in Birch Creek has historically been variable due primarily to the fluctuation of placer mining activities in the watershed. As a result of inadequate pre-1990s reclamation in the headwaters area and other tributaries to Birch Creek (Harrison Creek, Crooked Creek), turbidity and suspended solids levels may be elevated an unknown quantity above natural conditions. However, turbidity levels are elevated in most Interior Alaska streams, both those which have been placer-mined and those which have not, during high flow events. 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. A Total Maximum Daily Load is then required for the stream segment. In 1996, the EPA issued a total maximum daily load for total suspended solids to meet water-quality standards for turbidity in Upper Birch Creek of 20 mg/L. Several tributaries in the Birch Creek drainage are listed in Section 303(d) as impaired waters because they exceeded water-quality criteria for turbidity (Alaska Department of Environmental Conservation, 2006). Upper Birch Creek is the only Eastern Interior Planning Area stream on BLM-managed land listed on the State of Alaska's 303d list of impaired water bodies. Since the mid-1990s, strict enforcement of water quality standards for placer mine operations has improved water quality (turbidity) downstream of active mines.

2.1.3.3. Trends

Interpreting trends from water quality data can be difficult and sometimes misleading. Often, water-quality measurements are taken at one point in time and do not encompass the annual, seasonal, and daily fluctuations in the water quality within a stream system. Specific runoff events, such as summer cloudbursts, can cause changes in water quality for short or long periods of time depending on the location and magnitude of the runoff event. Single point data such as listed in Table 2.2 do not reveal the average or range of the water quality indicator. Most streams and lakes within the planning area are remote with no reported adverse impacts from anthropogenic activities.

Prior to 1987, placer gold mine operations in the Fortymile River, Birch Creek, and Beaver Creek watersheds were a concern because disturbance to stream banks and streambeds lead to increased erosion and high instream turbidity and suspended solids. The most common pollutant reported was excess sediment. Direct discharge of turbid waters from mining operations had severe adverse impacts on aquatic resources. Pollution control programs including the Nonpoint Source Management Program established by the 1987 Clean Water Act Amendments have made significant headway in addressing water pollution. Over the past two decades, pollution from

point sources, particularly placer mine operations, has been substantially reduced through controls achieved via the National Pollution Discharge Elimination System permit program.

Furthermore, the BLM initiated a riparian reclamation and stream channel reconstruction project in Nome Creek, headwaters to Beaver Creek, in 1990. Approximately 5.5 miles of stream channel and about 210 acres of riparian habitat and floodplain have been reclaimed. The BLM undertook a substantial reclamation project in Harrison Creek, in the upper Birch Creek watershed, beginning in 2005. Active and historic mining claims in this area have unstable stream channels and lack erosion control measures, leading to the release of excessive suspended sediment, especially during summer high flow events. 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. Reclamation work in Harrison Creek will continue through 2010.

Abandoned placer mine lands and placer mine operations remain a water-quality concern in the Fortymile River, Birch Creek and Beaver Creek watersheds. Nevertheless, water quality indicators in each of the watersheds are relatively good. In a joint study by the USGS and the Alaska Department of Natural Resources (DNR), turbidity and chemical water quality due to suction dredging in the Fortymile River were found to be within the range of natural variations in water quality (Wanty et al. 1997). A cooperative study with the BLM and the USGS found, median suspended-sediment concentrations, collected during 2004 and 2005, for two placer-mined tributaries to upper Birch Creek were less than the 20 milligrams per liter total maximum daily load set by the EPA for the upper Birch Creek basin in 1996 (Kennedy and Langley, 2007). Preliminary 2007 water quality data from continuous recorders deployed on the main stem of the Fortymile River and upper Birch Creek confirm these watersheds are meeting State of Alaska Water Quality Standards.

2.1.3.4. Forecast

In the Eastern Interior Planning Area, most BLM waters are forecast to remain in proper functioning condition and are expected to continue to meet State of Alaska Water Quality Standards. Improved management practices that have been in place since the late 1980s should continue to control the release of excessive sediments from mining operations and limit erosion in recreation areas. BLM will likely continue to develop specialized expertise and capabilities regarding abandoned placer mine reclamation and management as well as expanding water quality monitoring efforts. Reclamation of remaining abandoned placer mine tailings on BLM-managed land is expected to largely be complete within the next 10 years.

Recreation and mining activity will likely increase in the planning area, especially in road-accessible areas. These activities may lead to increased erosion, water diversions, channel alterations, and riparian vegetation loss; key factors influencing sediment load in streams and rivers.

2.1.3.5. Key Features

Key features include the three streams included in the Wild and Scenic Rivers System: the Fortymile, Birch Creek, and Beaver Creek. The BLM must strive to maintain the water quantity and quality of water in these high value streams.

2.1.4. Vegetative Communities

The vegetative cover of the planning area has been classified and mapped by a series of projects conducted by the BLM in cooperation with Ducks Unlimited and other agencies and using Landsat imagery. A new vegetation classification for mapping has been created as part of the Landfire project. This classification will provide the basis of the description of vegetative communities in the Draft RMP and EIS, once these products are available.

Lands managed by BLM in the planning area occur primarily in the Yukon-Tanana Upland Ecoregion (ecoregion descriptions are from Nowacki et al 2001). Ecoregions are relatively large geographic areas with characteristic and distinct climate, geology, and assemblages of vegetation and natural communities. 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). In the planning area, the contrast between very long cold winters and warm summers is large. The Yukon-Tanana Upland Ecoregion consists of broad, rounded mountains of moderate height, underlain by the metasedimentary Yukon-Tanana terrane. This terrane is a composite of transported crust blocks that includes former volcanic island arcs and continental shelf deposits. Most surfaces are comprised of bedrock and coarse rubble on ridges, colluvium on lower slopes, and alluvium in the deeply incised, narrow valleys. The region is underlain by discontinuous permafrost on north-facing slopes and valley bottoms. In valley bottoms, permafrost is thin, ice-rich, and relatively "warm." Vegetation is dominated by white spruce, birch and aspen on south-facing slopes, black spruce on north-facing slopes, and black spruce woodlands and tussock and scrub bogs in valley bottoms. Floodplains of headwater streams support white spruce, balsam poplar, alder, and willows. Above treeline, low birch-ericaceous shrubs and Dryas-lichen tundra dominate. This area has the highest incidence of lightning strikes in Alaska and the Yukon Territory, causing frequent forest fires.

Small portions of the Eastern Interior planning area occur in the Ray Mountains and Tanana-Kuskokwim Lowlands ecoregions. With the exception of the northern White Mountains (Victoria Creek drainage) in the Ray Mountains Ecoregion, few if any BLM-managed lands occur in these two ecoregions.

Lands in the Upper Black River Subunit occur in the North Ogilvie Mountains (higher elevations) and Yukon-Old Crow Basin (lower elevations) ecoregions.

The North Ogilvie Mountains

This terrain consists of flat-topped hills and eroded remnants of a former plain. This area represents the western extent of the North America stable platform onto which terranes radiating from the Pacific and Arctic Oceans have attached. Sedimentary rocks, especially limestone, underlie most of the area. Ridgetops and upper slopes are often barren with angular, frost-shattered rock outcrops (resembling castellations) surrounded by long scree slopes. These are characteristics of an unglaciated area that has undergone long periods of erosion. Shallow soils have developed in rocky colluvium on mountainsides where landslides, debris flows, and soil creep frequently occur. On lower slopes, soils are deeper, more moist, and underlain by extensive permafrost. Low shrub tundra of willow, alder, and birch and aspen and spruce woodlands occur at lower elevations. These mountains are the source of many streams that eventually feed the Porcupine, Yukon, and Peel Rivers. Lakes are relatively rare.

The Yukon-Old Crow Basin Ecoregion

This gently-sloping basin along the Porcupine River is comprised of depositional fans, terraces, pediments, and mountain toeslopes that ring the Yukon and Old Crow Flats. The surfaces surrounding the flats are largely unglaciated and products of millions of years of weathering of the surrounding mountains. Here, deep deposits of colluvial, alluvial, and eolian origin are underlain by continuous masses of permafrost. The marshy flats have developed in deep alluvial and glaciolacustrine deposits underlain by discontinuous permafrost. The poorly drained flats and terraces harbor vast wetlands pockmarked with dense concentrations of thaw lakes and ponds. On the flats, water levels of lakes are often maintained by spring flooding rather than precipitation. Active fluvial processes are etched throughout the topography featuring deltaic fans, terraces, and floodplains. Opaque with glacial silts and shoreline mud, the Yukon River forms an aquatic maze of islands, sandbars, meander sloughs, and oxbow lakes as it crisscrosses the lower flats. Vegetation varies with soil drainage grading from wet grass marshes and low shrub swamps to open black spruce forests to closed spruce-aspen-birch forests on better-drained uplands. Summer forest fires are common.

Fire and vegetation

Fire regimes in Alaska forest types are generally characterized by low frequency/high intensity fire events. Black spruce stands tend to burn with similar frequency regardless of spruce canopy closure. Stands can be ready to burn as early as 40 years, once a moss/lichen layer has developed, but average fire return interval for both woodland and closed spruce stands is estimated to be 80 years. The range of reported fire cycles from black spruce forests is roughly 40 to 120 years (Viereck 1983). However, much older stands are not uncommon. The floodplain white spruce forest type is characterized by longer fire cycles, estimated at 110 years, with a range of 80-150 years. Studies of a watershed adjacent to the White Mountain NRA indicate longer fire return intervals (Fastie et al 2003). Studies in the White Mountains and Steese NCA (Herriges, unpublished data) also indicate longer fire return intervals; e.g. an upland white spruce stand of approximately 500 years age was documented.

Northern boreal forests are adapted to fire. Vegetation recovers by sprouting or from seed stored in the forest organic layer (duff) after fire. The exact response varies by fire intensity, season, moisture condition and plant species. The amount of organic forest floor material consumed during fire is particularly important in the revegetation process because the roots and propagules of species are located at different depths, and some species have light, windblown seed which can readily colonize exposed mineral soil seedbeds. 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 “reindeer” and arboreal beard lichens will be scarce in post-fire stands for long periods. Lichens, especially the *Cladina* species, which are preferred and important winter forage for caribou and reindeer, typically require over 80 years to reach abundance (Thomas et al, 1996; Joly et al, 2002). Black spruce, which releases seed that was protected during fire in semi-serotinous cones, often replaces itself as the dominant tree in the absence of competition from other tree species. Post-fire recovery of white spruce stands after fire depends on the stage of seed production at fire occurrence and the distance to unburned spruce as sources of new seed and/or the presence of dispersal agents.

2.1.4.1. Indicator

There has been little quantitative monitoring of vegetation conditions of BLM lands in the planning area. A set of caribou forage monitoring plots was established in the Steese NCA in 2007. A more extensive and intensive vegetation monitoring system was recently initiated in the adjacent Yukon Charley National Preserve. Plots established in 2001 and 2002 to inventory fire history in the White Mountains NRA and Steese NCA could be modified to serve as permanent vegetation monitoring plots.

Fire is the predominant landscape scale disturbance factor in the area. Determination and tracking of fire regime condition class will serve as one indicator, but this is quite coarse and more detailed monitoring of the fire regime may be warranted. Fire perimeters have been recorded and mapped since the 1950s and can provide the basis for estimating fire return intervals. This mapping should be refined to include mapping of unburned inclusions within fires (which can be extensive) and mapping of fire severity.

Relatively little is known about how vegetation communities recover from fire or how this will change with climate warming. Changes in vegetative community response to fire should be monitored, perhaps in cooperation with other agencies and universities.

The annual acres of surface disturbance from permitted activities could be tracked each year as an indicator. Miles of OHV trail could be monitored and used as an indicator. Similarly, the acres of new disturbance from OHV use could be tracked through annual or periodic inventories. A broad inventory of vegetation change in response to changing climate could be conducted in cooperation with other agencies and universities.

2.1.4.2. Current Condition

Vegetative communities in this large and relatively inaccessible planning area are largely undisturbed by human activities. It is therefore possible to emphasize protection rather than restoration in managing vegetation and multiple land uses. Fires have the greatest impact on vegetative communities in the planning area. Most burned acreage is the result of lightning-caused wildfires. Currently, BLM lands within the area are predominantly classified in the “limited fire management option”. Exceptions include some selected lands and lands adjacent to communities. As such, fire now operates in the planning area with little interference from human activities.

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. Although removal and compaction of vegetation may make travel somewhat easier for a time, it can lead to changes (especially erosion, subsidence, or thermokarst) which make the trail difficult to travel. This then leads to detouring off the trail and subsequent widening of impacts. Although many miles of OHV trail exist in parts of the planning area, the percent of vegetative cover which is impacted is currently still quite small, likely less than 1%.

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. Some additional areas of riparian vegetation are impacted to some extent by changes to channel and flow characteristics of streams.

2.1.4.3. Trends

Prior to 1980, it was policy that all wildfires in the state would be completely and aggressively suppressed (Alaska Interagency Wildland Fire Management Plan 1998). Following completion of 13 Interagency Wildland Fire Management plans (between 1980 and 1988) much of the planning area was placed in "limited" (where fires were typically not suppressed) or "modified" units (where fires starting after July 10 were typically not suppressed). The proportion of the area designated as "limited" has generally grown since the establishment of the Interagency Fire Management plans. Much of the planning area is within 100 miles of fire bases in Fairbanks, Central, Delta, and Tok, and fire suppression (though certainly not complete) may have been effective enough to change 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. The record fire seasons of 2004-2005 may have reduced average stand ages, but (because of very large fire sizes) the average size of seral stage communities likely increased substantially, with large areas in the same stage of forest development. The changes in fire regime due to a 40-50 year period of fire suppression are likely not large enough to alter the Fire Regime Condition Class score. Despite a policy of full suppression, many fires could not be controlled. Tree stand ages have been sampled at more than 200 sites within the White Mountains NRA and Steese NCA. When analyzed, this may give us a more complete picture of fire history in this area.

Changes in requirements for reclamation of placer mined lands initiated in 1981 have resulted in generally more rapid revegetation of mined sites. Additionally, the numbers of active mining operations within the White Mountains, Steese NCA and Fortymile NWSR corridor have decreased since the original RMPs were written in the 1980s.

OHV ownership and use has increased substantially since 1986. 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 travelled, resulting in a greater potential for disturbance of vegetation.

Tree-line has risen slightly but measurably in the planning area in conjunction with warming climate (Lloyd and Fastie 2003). Other climate related changes in vegetation have also likely been occurring.

2.1.4.4. Forecast

With the exception of changes in human-caused fire or a major increase in mining activity, the activity which is most likely to affect large acreages of vegetation in the planning area is summertime overland travel by OHVs. The ownership, use, and technological capabilities of OHVs are likely to continue to increase. New trails will continue to be established and use on existing trails will exceed agency ability to rehabilitate, resulting in a widening footprint.

Mining activity and associated impacts could increase if additional areas are opened to mineral entry.

Climate change is predicted to result in changes to wildfire characteristics and occurrence, which will result in significant changes to vegetative communities. In a warmer climate, fires will likely be more prevalent, but if these fires generate more deciduous forests, at some point, the landscape may become less flammable and fire frequency and severity could stabilize or decrease. Although the long-term trend in fire frequency is currently unknown, climate warming will result in a greater proportion of the forest landscape represented by deciduous tree species and a younger age structure of vegetation stands. It is also likely that some forests will be converted to grassland (or shrubland) as a result of climate warming: 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). Climate warming is also likely to lead to continued rising of treeline, which will reduce alpine tundra habitats in the planning area. This change is not rapid, and treeline is not expected to undergo a large rise within the next 20 years. Additionally, winds and other factors may set an upper limit to the rise of treeline.

With increased fire frequency, old-growth spruce stands will become less common and it may become more important to prevent impacts to remaining stands. Similarly, if treeline increases in altitude with global warming, alpine habitats will become less common and populations of alpine-dependent wildlife species may become less secure.

2.1.4.5. Key Features

Three plants that have been found to occur on BLM lands in the planning area are quite rare and habitats supporting these plants should be considered for special management and/or addition to the BLM-sensitive species list. The distribution of each of these species is quite limited and BLM lands appear to support significant portions of the known populations of these species in Alaska: *Antennaria densifolia* (denseleaf pussytoes), *Draba densifolia* (denseleaf draba), and *Ranunculus turneri* (Turner's buttercup).

Antennaria densifolia was first described from the Mackenzie Mountains in the Northwest Territory, Canada. The first Alaskan collections were made in the Keele Range near the Alaska-Yukon border during a BLM sponsored inventory in 1991 (Lipkin and Tande 1992). The species is now documented from several scattered localities in the Keele Range and in the Ogilvie Mountains of Alaska, the Ogilvie and Mackenzie mountains in Yukon, and from a highly disjunct population in Montana. *A. densifolia* grows on calcareous rocky soils, dryas fellfields, and screes from treeline into the alpine. It 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. One of the two only known general localities for the species is on BLM-managed lands in the Keele Range.

Draba densifolia was first described from the 'Rocky Mountains.' The species' distribution is widespread in western and northwestern North America, but within Alaska, it is documented from only a few, disjunct localities within the Yukon-Tanana uplands including Lime Peak, Mt. Prindle, Sourdough Creek headwaters, the Charley River drainage, and the Goodpaster River headwaters. Gjærevoll (1963) reported *D. densifolia* from Mt. Harper in the southeastern Yukon-Tanana uplands. In addition, a single specimen from Horn Mountain, in the eastern Alaska Range, documents the species.

D. densifolia is found growing on outcrop crevices, alpine screes, gravelly slopes, and fellfields. It is known to occur, and is often locally common, in both Lime Peak and Mt. Prindle areas

which lie on the border between the White Mountains NRA and the Steese NCA. The only other region of the Yukon-Tanana uplands where the species has been well documented from is the Charley River drainage within Yukon-Charley Rivers National Preserve. The single collections from Horn Mountain and the Goodpaster River headwaters are located on State of Alaska land. Mount Harper, the site of one literature record, is native-selected BLM lands. Therefore BLM-managed land in the Yukon-Tanana uplands supports a major portion of the entire known range within Alaska.

Ranunculus turneri was first described from specimens collected along the Porcupine River near the Alaska-Yukon border (Greene 1892). Additional Alaskan localities where the species has since been documented include St. Lawrence Island, the Cape Thompson area, and Mt. Casca in the Ogilvie Mountains. *R. turneri* is also known from Chukotka and Yakutia, Russia, and from northern and coastal Yukon and the Mackenzie River delta in Canada. 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 100 individuals.

R. turneri is found in moist subalpine and alpine tundra and meadows, under open riparian willow, in snow beds, and along moist creek banks. Populations documented from the Ogilvie Mountains and the Keele Range were growing on limestone bedrock, but the species is not restricted to carbonate rock. Of the additional known locations for the species in Alaska and Yukon, only the Mt. 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. One snow bed population visited supported several hundred plants, whereas most populations were much smaller, consisting of a very few to a dozen plants. The populations visited by the author at Mt. Casca were also small. These observations suggests the Keele Range could support a sizable portion of the plants in Alaska.

2.1.5. Fish

Native fish species are widely distributed in the Eastern Interior planning area and may be found in a variety of habitats. The planning area is known to support 17 native fish species and 3 stocked species (see Table 2.4, Section 2.1.6.2 Current Condition). Fish species present in the planning area may be described 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, chum salmon, and coho salmon, and non-salmon species such as whitefish, sheefish, burbot, northern pike, Alaska blackfish, and Arctic lamprey. There is a commercial fishery for Chinook, chum, and coho salmon within the planning area, but not in waters managed by the BLM. Sport fish species include Arctic grayling, northern pike, burbot, and salmon. The ADF&G Sport Fish Division has stocked area lakes with Arctic char, rainbow trout, and lake trout. Non-sport fish are important prey for other species and include longnose suckers, slimy sculpin, lake chub, and ninespine stickleback.

Approximately 380 miles (600 km) of streams and rivers on BLM-managed lands in the planning area are listed in the Anadromous Waters Catalog, maintained by the Alaska Department of Fish and Game (ADF&G) (Johnson and Daigneault 2008). Anadromous streams and rivers are those supporting fish species that migrate between freshwater and marine waters, such as salmon, sheefish, and some whitefish. 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. Streams in

the Anadromous Waters Catalog (Johnson and Daigneault 2008) reflect the extent of salmon documented through fish surveys, but do not necessarily represent the actual limits of salmon habitat (Map 2.3 Anadromous Streams).

Although fish populations in the planning area are generally in good condition, fish production may be limited by releases of fine sediments from placer mining activities, scouring flows, and dewatering, which impact reproductive success and survival of fish. Mining activities may adversely affect anadromous fisheries in the Yukon River drainage through stream and riparian habitat disturbance, increased sedimentation, and release of trace metals such as mercury and copper (USFWS 1986, 1991; Buhl and Hamilton 1990; Salomone and Bergstrom 2004). The BLM helps to minimize the negative effects of placer mining on fisheries by developing and enforcing mining and reclamation techniques that limit sediment release and promote stream bank stability and revegetation.

The Alaska Department of Environmental Conservation (ADEC) is responsible for monitoring water quality in Alaska. In 1992, ADEC included Birch Creek in a list of impaired waters due to elevated turbidity levels resulting from placer mining activity within the drainage. A total maximum daily load for turbidity was developed and finalized for Birch Creek in 1996, but Birch Creek remains an impaired water body (ADEC 2007). The extent to which elevated turbidity levels in the drainage may impact Birch Creek fish production is unknown. Monitoring done by ADEC in the Crooked Creek watershed, a tributary to Birch Creek, in the 1990s found significant improvements in water quality; however, Crooked Creek remains listed as impaired (ADEC 2007).

2.1.5.1. Indicators

Habitat and population indicators have not been developed for fish species in the planning area. Typical indicators of fish habitat quality include water temperature, water quality, substrate embeddedness, sediment levels, pool frequency and quality, presence of refugia, stream width/depth ratio, stream bank condition, riparian vegetation condition, floodplain connectivity, road density, physical barriers, and disturbance history. Typical indicators specific to fish populations include population size, connectivity to migration routes, persistence, growth, and survival.

Indicators of fishery resource conditions in the planning area are generally related to fishery the quantity and quality of available habitat rather than population size. Information regarding fish population structure and size in the Eastern Interior region is scarce and insufficient to identify population size or escapement goals. A qualitative indicator of fish population health that has been included in previous resource management plans for this region is the maintenance of viable self-sustaining populations of fish.

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. Using methods to assess PFC, riparian habitat is rated as “PFC,” “Functional-At Risk,” or “Nonfunctional” based on an assessment of its hydrology, vegetation, and soil/erosion characteristics (Prichard 1998, 2003).

Another indicator related to fish habitat is water quality. The ADEC monitors water quality and works to ensure that State of Alaska water quality standards are met in all inland waters. See Section 2.1.3 Water Resources for more detailed descriptions of water quality indicators.

ADF&G has management authority over commercial, sport, and personal use fisheries in the planning area. Subsistence fisheries are managed by ADF&G in State waters and by the Federal Subsistence Board in Federal public waters. ADF&G reports provide some indication of the relative health of various fish populations in the planning area.

2.1.5.2. Current Condition

Twenty species of fish representing 9 different families are present in streams and lakes in the Eastern Interior planning area (Table 2.3). Resident fish species including Arctic grayling, whitefish, northern pike, burbot, slimy sculpin, longnose suckers, and ninespine stickleback are present in most major streams and tributaries, while anadromous fish such as salmon and sheefish are limited to larger rivers (Appendix A).

Table 2.3. Fish species present in watersheds in the Eastern Interior planning area.

Family	**Scientific name**	**Common name**	**Native**
Esocidae	*Esox lucius*	northern pike	x
Catostomidae	*Catostomus catostomus*	longnose sucker	x
Cottidae	*Cottus cognatus*	slimy sculpin	x
Cyprinidae	*Couesius plumbeus*	lake chub	x
Gasterosteidae	*Pungitius pungitius*	ninespine stickleback	x
Lotidae	*Lota lota*	burbot	x
Petromyzontidae	*Lampetra japonica*	Arctic lamprey	x

Family	Scientific name	Common name	Native
Salmonidae	*Coregonus nasus*	broad whitefish	x
	Coregonus pidschian	humpback whitefish	x
	Coregonus sardinella	least cisco	x
	Prosopium cylindraceum	round whitefish	x
	Stenodus leucichthys	sheefish/inconnu	x
	Oncorhynchus keta	chum salmon	x
	Oncorhynchus kisutch	coho salmon	x
	Oncorhynchus tshawytscha	Chinook salmon	x
	Oncorhynchus mykiss	rainbow trout	
	Salvelinus namaycush	lake trout	
	Salvelinus alpinus	Arctic char	
	Thymallus arcticus	Arctic grayling	x

Family	**Scientific name**	**Common name**	**Native**
Umbridae	*Dallia pectoralis*	Alaska blackfish	x

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.

None of the fish species present in the planning area are listed as either threatened or endangered under the Endangered Species Act (16 U.S.C. 1531 et seq.). The Beaver Creek Chinook salmon population was designated as a BLM-Alaska sensitive species in 2004. See section 2.1.8 Special Status Fish for further discussion of Beaver Creek Chinook salmon.

Under guidelines set forth in the Policy for the Management of Sustainable Salmon Fisheries (Alaska State Regulation 5 AAC 39.222), the State of Alaska Board of Fisheries listed Yukon River Chinook salmon as a stock of yield concern in 2000. This designation, which was continued in 2007, is based on the inability to maintain expected yields, or harvestable surpluses, above the stock's escapement needs, despite the use of specific management measures. The two rivers in the planning area that have consistent spawning populations of Chinook salmon are Beaver Creek and Salmon Fork Black River; however, there is no commercial harvest in these rivers.

In the majority of watersheds in the planning area, human activity has been minimal, and most riparian and stream habitats are in proper functioning condition. 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, fish populations that were historically present in streams affected by placer mining have been reduced in size or entirely displaced. Active restoration efforts have had variable success in reestablishing viable fish populations.

Placer mining typically involves rerouting streams into bypass channels and stripping vegetation and topsoil to reach gold in the streambed gravels (Yeend et al. 1998). This disturbance to stream banks and stream beds leads to increased erosion and high instream turbidity and suspended solids, especially during high flows. High suspended and total sediment can persist for many years because revegetation occurs very slowly due to the lack of organic material in tailings piles, and because unconsolidated tailings piles do not contain stream channels during high flows (Kennedy and Langley 2007).

Placer mining is or was occurring on some BLM lands in three of the planning subunits: the Fortymile, Steese, and White Mountains. Gold was first discovered in the Fortymile River Mining District in 1886, and has been mined there ever since (Gough et al. 1997). Mining activities have led to stream channelization and a reduction in available fisheries habitat in Chicken, Lost Chicken, and Wade creeks. Because 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 1987).

Nevertheless, water quality indicators in the Fortymile basin are relatively good. In a joint study by the U.S. Geological Survey and the Alaska Department of Natural Resources, turbidity and chemical water quality due to suction dredging in the Fortymile River were found to be within the range of natural variations in water quality (Wanty et al. 1997). Sampling of Arctic grayling from the Fortymile River indicated that the total mercury content in muscle tissue was well below both the Food and Drug Administration's action level and the U.S. Environmental Protection Agency's risk-based concentrations for mercury (Gough et al. 2004).

Placer mining operations have been active in the Birch Creek watershed in the Steese NCA since gold was discovered there in 1893 (BLM 1983b; Yeend et al. 1998; Kennedy and Langley 2007). The Birch Creek River Management Plan (BLM 1983b) reported poor water quality due to active placer mining in the headwaters and tributaries to Birch Creek. As a result, 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. Active and historic mining claims in this area have unstable stream channels and lack erosion control measures, leading to the release of excessive suspended sediment, especially during summer high flow events. 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.

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).

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.

The most notable placer mining site in the Beaver Creek watershed is Nome Creek in the southeastern portion of the White Mountains. Nome Creek was extensively mined from the early 1900s to the late 1980s, and approximately 8 miles of stream bed and associated floodplain were disturbed in the process (Fleming and McSweeny 2001; Kostohrys 2007). 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.

Although information on salmon escapements in the planning area is sparse, available data indicate that Yukon River tributaries on BLM-managed lands do not contribute significantly to Yukon River salmon populations as a whole. In the Black River watershed, Chinook and coho salmon are rare, and the largest documented escapement of fall chum salmon in one year is approximately 2,100 fish (Buklis and Barton 1984).

Spawning populations of salmon are not present in the Fortymile River watershed. In Birch Creek, the salmon escapement has not been assessed. In the four years of BLM's weir operation in Beaver Creek, the average escapements were approximately 200 Chinook salmon and 200 fall chum salmon (Collin and Kostohrys 1998; Collin et al. 2002). These numbers are very small in comparison with the 10-year average abundance estimates of these fish in the Yukon River – 145,000 Chinook salmon and 630,000 fall chum salmon (JTC 2008). However, as mentioned in section 2.1.8, small salmon populations such as these may be particularly susceptible to overharvest or adverse environmental factors.

Regional sport fisheries are managed to conserve wild stocks and provide recreational opportunities that benefit people socially and economically (Burr 2006; Brase 2008). Primary sport fish species in the planning area include Arctic grayling, northern pike, sheefish, and salmon. The planning area covers three ADF&G Sport Fish Division management areas: Arctic-Yukon, Lower Tanana, and Upper Tanana. A region-wide management plan was completed and adopted for Arctic grayling by the State Board of Fisheries in 2004 (Wild Arctic Grayling Management Plan 5 AAC 70.055). This plan directs ADF&G to use a conservative harvest regime to manage Arctic grayling in the Arctic-Yukon-Kuskokwim region for long-term sustained yield.

2.1.5.3. Trends

Watersheds within the planning area that are managed primarily by the BLM have experienced slight upward trends in fish habitat condition in the past decade. This is due in part to significant stream restoration efforts, such as those in Harrison Creek and Nome Creek. Improved mining practices and habitat protection stipulations required for placer mining operations have also contributed to the improved condition of fish habitat.

Based on indicators of the condition of fishery resources in the planning area, the trend is one of improving condition, with fishery resources and habitat moving toward the desired condition. For example, riparian proper functioning condition is improving as a result of stream rehabilitation efforts in Harrison Creek and Nome Creek. In addition, over the past decade, stipulations attached to permits for mining plans of operations have become more comprehensive in their requirements for habitat rehabilitation work. Since 1989, best management practices have required storing pollutant materials such as sediment so they are not released to streams and using settling ponds and wastewater recycling (EPA 1996). Water quality conditions have improved somewhat in Birch Creek and tributaries, largely as a result of these more stringent regulations.

2.1.5.4. Forecast

As human activity increases in the planning area, especially in road-accessible areas, fish habitat and populations may be affected by habitat degradation resulting primarily from mining activities and recreational uses. These activities often lead to increased erosion, water diversions, channel alterations, and riparian vegetation loss that are key factors influencing the status of fish populations.

However, under the current management regime, no significant declines in fish populations are anticipated. Improved management practices that have been in place since the late 1980s should decrease the release of excessive sediments from mining operations and limit erosion in recreation areas. The Fairbanks District Office is undertaking an evaluation of mining reclamation practices that may lead to recommendations for improved management practices. As these are incorporated

into future management, the success of mining reclamation should improve, thereby improving the quality of fisheries habitat and the status of fish populations in the planning area.

Currently, most of the planning area is closed to mineral entry and leasing, except for valid existing Federal claims that were in place before existing withdrawals were implemented. The White Mountains NRA and Steese NCA are withdrawn by ANILCA. However, ANILCA gives the Secretary of Interior the discretion to open these areas to some forms of mineral use through the land use planning process. The designated wild segments of the Fortymile River, Birch Creek, and Beaver Creek are withdrawn from mineral entry and leasing by the Wild and Scenic Rivers Act (WSR Act) for 1/2 mile on either side.

During development of the RMP, all existing withdrawals will be reviewed. If as a result of these reviews portions of the planning area are opened to new mineral entry and leasing, the possible effects on fish habitat include direct loss of habitat and reduced quality of available habitat through stream channelization, destabilization of stream channels and stream banks, loss of organic matter and riparian vegetation, increased erosion, turbidity and substrate embeddedness, and decreased water quality. These habitat changes may in turn adversely affect fish through displacement of fish populations, avoidance of turbid waters, reduced survival of eggs and fry, loss of interstitial spaces used for cover, and difficulty feeding in turbid waters.

2.1.5.4.1. Key Features

A description of the preferred habitats and life history of fishes found in the Eastern Interior planning area follows. The most important subsistence, commercial, and sport species are discussed, including Arctic grayling, Chinook, chum, and coho salmon, northern pike, and whitefish species. Crucial seasonal periods for the production and survival of these populations are provided in Table 2.4.

Table 2.4. Approximate dates of crucial production and survival periods for important subsistence, commercial, and sport fish species in Eastern Interior Alaska.

Species	Crucial season	Approximate dates
Arctic grayling	spawning	May-June
	egg incubation	May-July
Chinook salmon	spawning	July-August
	egg incubation	July-February

Species	**Crucial season**	**Approximate dates**
chum salmon	spawning	August-September
	egg incubation	August-February
coho salmon	spawning	September-October
	egg incubation	September-March
northern pike	spawning	May-June
	egg incubation	May-July
whitefish species	spawning	September-November
	egg incubation	September-March

Arctic grayling

Arctic grayling (*Thymallus arcticus*) were once found in many parts of the northern United States but have almost disappeared from many areas due to habitat loss, overfishing, and competition from non-native species (ADF&G 1994). However, in Alaska they are widespread, and Arctic grayling are present in waters in all four units in the planning area. They remain in freshwater throughout their lifecycle and are popular sport fish. The preferred habitats for Arctic grayling are clear waters of large rivers, rocky streams, and lakes (Mecklenburg et al. 2002).

In the planning area, Arctic grayling may be impacted by excessive sedimentation resulting from stream channel and riparian habitat disturbance caused by human activities such as mining, road construction, and recreational uses. As the population in the Fairbanks area increases, there will likely be greater interest in sport fishing opportunities, which may impact Arctic grayling

populations through direct and indirect mortality. Populations that are particularly susceptible to fishing pressure due to their proximity to towns include those in Nome, Beaver, and Birch creeks, and the Fortymile River area. Spawning areas are expected to be found in the upstream reaches of these streams in habitat with gravel substrate.

Chinook salmon

Chinook salmon (*Oncorhynchus tshawytscha*) are abundant in the planning area. They are anadromous fish, meaning they rear in freshwater, migrate to marine waters where most of their growth occurs, and migrate back upstream to spawn once maturity is reached. Chinook salmon have been found in all planning subunits, although their catalog listing in the Fortymile River area was removed in 1999 due to a lack of supporting data (ADF&G 1999).

Chinook salmon are an extremely important resource for subsistence, commercial, and sport fisheries. Subsistence harvests of Chinook salmon are highly valued for human consumption (Busher et al. 2007). The commercial fishery for Chinook salmon in the planning area is small and typically represents less than 5% of the total Yukon River harvest in Alaska (ADF&G 2007). There is no commercial fishing in public waters managed by the BLM.

Chinook salmon in the planning area may be adversely affected by habitat degradation due primarily to excessive sedimentation resulting from stream channel and riparian vegetation disturbances. The State of Alaska has considered Yukon River Chinook salmon a stock of concern since 2000. In 2004, the BLM-Alaska designated Beaver Creek Chinook salmon as a sensitive species. Further discussion of this designation may be found in Section 2.1.9 Special Status Fish.

Table 2.5. Upper Black River area streams listed in the Anadromous Waters Catalog.

Drainage	Species	Life Stage	Anadromous Catalog #
Salmon Fork Black River	Chinook salmon	spawning	334-45-11000-2001-3050-4040-5301
	chum salmon	spawning	
Kevinjik Creek	chum salmon	spawning	334-45-11000-2001-3050-4040-5301-6075

Drainage	**Species**	**Life Stage**	**Anadromous Catalog #**
Kandik River (Charley Creek)	Chinook salmon	spawning, rearing	334-45-11000-2325
	chum salmon	present	
	coho salmon	present	
Indian Grave Creek	Chinook salmon	rearing	334-45-11000-2325-3152
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3157
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3159
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3165
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3167
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3175

Drainage	Species	Life Stage	Anadromous Catalog #
Big Sitdown Creek	Chinook salmon	rearing	334-45-11000-2325-3178
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3179
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3183
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3187
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3195
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3200
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3203
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3210

Drainage	Species	Life Stage	Anadromous Catalog #
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3213
Unnamed tributary	Chinook salmon	rearing	334-45-11000-2325-3216

Table 2.6. Fortymile River area streams listed in the Anadromous Waters Catalog.

Drainage	Species	Life Stage	Anadromous Catalog #
Fortymile River and tributaries	Chinook salmon	rearing	Delisted in 1999, previously listed as 334-45-11000-2600. (ADF&G, unpublished data, accessed at http://www.sf.adfg.state.ak.us/FDDDOCS/DOCUMENTS/NOM_PDFs/INT/99-330a.pdf)

Table 2.7. Steese NCA streams listed in the Anadromous Waters Catalog.

Drainage	Species	Life Stage	Anadromous Catalog #
Birch Creek	Chinook salmon	present, rearing	334-40-11000-2860-3030-4080
	chum salmon	present	
	coho salmon	present	

Drainage	Species	Life Stage	Anadromous Catalog #
	sheefish	present	
Bluff Creek	Chinook salmon	rearing	334-40-11000-2860-3030-4080-5100
Unnamed tributary	Chinook salmon	rearing	334-40-11000-2860-3030-4080-5200
Sheep Creek	Chinook salmon	rearing	334-40-11000-2860-3030-4080-5311
Harrison Creek	Chinook salmon	rearing	334-40-11000-2860-3030-4080-5340
Twelvemile Creek	Chinook salmon	rearing	334-40-11000-2860-3030-4080-5611

Table 2.8. White Mountains NRA streams listed in the Anadromous Waters Catalog.

Drainage	Species	Life Stage	Anadromous Catalog #
Beaver Creek	Chinook salmon	present, spawning	334-40-11000-2810-3100
	chum salmon	present	
	coho salmon	present	

Drainage	**Species**	**Life Stage**	**Anadromous Catalog #**
Victoria Creek	Chinook salmon chum salmon	rearing present	334-40-11000-2810-3100-4200
Nome Creek	Chinook salmon	spawning	334-40-11000-2810-3100-4340
Ophir Creek	Chinook salmon	spawning, rearing	334-40-11000-2810-3100-4340-5020

Chum salmon

Chum salmon (*Oncorhynchus keta*) have the widest distribution of Pacific salmon species, and in North America they range from California to Alaska (Hale et al. 1985). Within this range, the Yukon River is the greatest producer of chum salmon (Morrow 1980). Chum salmon in the planning area are mainly used for subsistence purposes, although there is some commercial opportunity in the upper Yukon River drainage for fall chum salmon. The Yukon River has distinct summer chum and fall chum salmon runs, with summer chum entering the river in June, and fall chum entering the river in late June or July. Fall chum salmon tend to be fatter and of higher quality than summer chum salmon, which are used primarily as a source of food for dogs (Morrow 1980). Summer chum salmon generally spawn in the lower part of the Yukon River drainage, and only fall chum salmon are present in the planning area.

Chum salmon in the planning area may be sensitive to habitat degradation that results in excessive sedimentation of stream substrates and lowered dissolved oxygen levels. Successful incubation of chum salmon embryos and fry may be impaired by high levels of fine sediments, and low levels of dissolved oxygen impair embryo growth and delay hatching and emergence (Hale et al. 1985). Fitness of emerging fry may also be adversely affected by extreme low temperatures and flows, and the selection of spawning sites with upwelling groundwater flows may be one way chum salmon compensate for this (Salo 1991).

Yukon River summer and fall chum salmon were designated as stocks of concern in 2000 under the State of Alaska Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222). Fall chum salmon were considered yield concerns for their failure to produce an expected harvestable surplus. This designation was continued in 2004 but was discontinued in 2007 based on estimates of fall chum salmon run sizes that were at or above average between 2003 and 2006.

Coho salmon

Coho salmon (*Oncorhynchus kisutch*) in North America range from California to Alaska, and their presence has been documented in the Kandik River in the Upper Black River subunit, Birch Creek in the Steese NCA, and Beaver Creek in the White Mountains (Johnson and Daigneault 2008). Their distribution in the planning area is not as well understood as that of Chinook or chum salmon. Spawning populations are well documented in the Tanana River drainage, with almost all spawning occurring in north-flowing streams that drain the north side of the Alaska Range (Morrow 1980).

Coho salmon are an important subsistence resource, although not as abundant as chum salmon in the Yukon River drainage. There is a small commercial fishery for coho salmon in the upper Yukon River and Tanana River in the planning area, but the harvest of coho salmon is somewhat constrained by the stock of concern status for fall chum salmon, which have overlapping run timing and are susceptible to similar fishing gear types.

Upstream migration of coho salmon in the Yukon River begins in late July and August, and spawning grounds are reached by September and October. Coho salmon are known to spawn in spring-fed tributaries in the Yukon River drainage (Morrow 1980). Spawning habitat is usually at the head of riffles over substrate of gravel and small pebbles and low levels of fine sediments (McMahon 1983).

Northern pike

Northern pike (*Esox lucius*) are found in waters throughout the planning area and are an extremely important subsistence and sport fish resource. Particular areas of importance on BLM-managed lands are the Black River, lower Birch Creek, and Beaver Creek (Appendix A). Northern pike spend the winter in relatively deep waters in rivers and lakes, and move into marshy off-channel habitats in the spring and early summer to spawn. After spawning, eggs hatch within 4 weeks and the fry feed on zooplankton and aquatic insects until they reach a size of 2 inches (5 cm), at which point they shift to a fish diet (Morrow 1980).

Whitefish

Whitefish (*Coregonus* spp.) are the most abundant type of fish north of the Alaska Range (ADF&G 1994), and they inhabit nearly all rivers and other freshwater habitats in the planning area (Appendix A). In the planning area, common whitefish include round, broad, and humpback whitefish, least cisco, and sheefish. All species of whitefish are important subsistence resources and they also provide some sport fishing opportunities.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), as amended in 1996 by the Sustainable Fisheries Act (Public Law 104-297), called for direct action to stop or reverse the continued loss of fish habitats. Toward this end, Congress mandated the identification, conservation, and enhancement of habitats essential to species regulated under fisheries management plans. The Magnuson-Stevens Act requires Federal agencies to consult with NOAA's National Marine Fisheries Service (NMFS) regarding any activity or proposed activity authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat

(EFH). Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (Magnuson Stevens Act, 16 U.S.C. 1801 et seq.).

NMFS recognizes waters listed under Alaska Statute 41.14.870 in the Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes, which have been documented to support salmon, as essential fish habitat. Tables 2.6, 2.7, 2.8, and 2.9 list streams in the planning area that are included in the Anadromous Waters Catalog (Johnson and Daigneault 2008). These streams total approximately 380 river miles (600 km) and are displayed on Map 2.3 Anadromous Streams. An EFH assessment will be incorporated into the Eastern Interior RMP/EIS.

2.1.6. Non-native, Invasive Species

Non-native, invasive species include pathogens, plants and animals. Many non-native, invasive plant (NIP) 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 for mining and recreation. Most of the NIP species within the planning area occur in disturbed areas such as along roadsides and within communities. NIP species also occur in association with disturbances from placer mining, recreation, road repair and gravel extraction. Most of these species come from South America, Europe, Asia, or Russia and 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 acronym NIP will 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. The term "weed" will be used in this document only if it is quoted or part of a phrase, title or legal term.

Of the NIP in the planning area, some may be classified as noxious plants. "Noxious" is a legal classification rather than an ecological term. States and government agencies may designate a species as a "noxious weed" if it directly or indirectly imposes economic or ecological effects to agriculture, navigation, fish and wildlife, wildlands, or public health. Federal laws require that certain actions be taken to manage listed, "noxious weed" species. In the BLM's ***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 (USDI BLM 1996). The Alaska Land Health Standards and Guidelines (BLM 2004) 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."

NIP occur along an invasiveness continuum from unlikely to become established to highly invasive. The invasiveness of a species is due to its genetic make-up which enables the plant to exploit a habitat "niche," and the lack of natural enemies such as insects, diseases, and pathogens. These are often referred to as invasive "weeds" and may or may not also be classified as noxious. Invasiveness can be difficult to predict and some species that are ranked low on the invasiveness scale may be able to adapt rapidly and become highly invasive. *Melilotus alba* (white sweetclover) and *M. officinalis* (yellow sweetclover) were introduced in Alaska in 1913 as potential forage and nitrogen-fixing crops. Both strains survived poorly at first and grew as annuals. After being grown for generations, *Melilotus* has shifted to a biennial life cycle and has become highly invasive, especially along highways, disturbed areas, and some rivers (Conn et al., 2008). By 2004 *M. alba* was detected north of the Grayling Lake (about 30 miles north of the Arctic Circle) and has quadrupled in distribution and density along some highways, such as the Elliott and Dalton highways.

Some of the potential consequences of NIP 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 chemistry alteration; scenic values; tourism; recreation; and in some cases, human health and safety. NIP 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. Some NIP are allelopathic, that is they produce chemicals that are transported to the soil and inhibit germination and growth of other vegetation, often native vegetation. Knapweeds (*Centaurea* spp.), which have been detected in southcentral and southeast Alaska, are allelopathic, effectively inhibiting the establishment and growth of surrounding plants. Growing conditions in Interior Alaska are likely to be conducive to knapweeds.

The magnitude of the NIP 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 NIP distribution and introduction from expanding. All western states except Alaska provide annual funding and statutory support for a state agency to conduct NIP management. Alaska does provide statutory support for management activities through AS 03.05.010 and AS 44.37, which authorize the Department of Natural Resources, Division of Agriculture, to prevent the importation and spread of pests 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 NIP 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.

BLM is a founding member of the Alaska Committee for Noxious and Invasive Plants Management. This is a network for non-governmental organizations and agencies for the coordination of NIP management, data management, knowledge transfer and development of statewide efforts, such as the certification of weed free forage and mulch. Efforts of non-governmental organizations and other interests in the group have resulted in passage of House Bill (HB) 324, an act prohibiting the importation, transfer or knowingly planting or cultivating of orange hawkweed and purple loosestrife.

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. The Forest Service and Alaska Department of Natural Resources have conducted risk assessments for forest pathogens that, if introduced, could pose a serious threat to forest health in Alaska. No known invasive terrestrial or aquatic animals have been detected in or adjacent to the planning area.

2.1.6.1. Indicator

The BLM Alaska Land Health Standards issued in 2004 (IM-AK-2004-023), provide five Standards by which the diversity and ecological health of BLM-managed land is measured, including a standard that encompasses threatened and endangered and native species. Indicators related to this standard are identified. These indicators are based upon the potential (or upon the

capability where potential cannot be achieved) of individual sites or landforms. BLM uses these indicators to monitor the trend of the resource toward, or away from the standard.

The goal for the threatened, endangered and native species standard is to ensure that habitats support healthy, productive, and diverse populations and communities of native plants and animals. The desired condition (objective) for this standard is that habitat elements essential for those species, populations and communities are present and available to the extent they are consistent with the potential or capability of the landscape. Indicators of successfully meeting the standard include: species composition, distribution, productivity and population trends, habitat distribution, connectivity and structure, and fire history. Guidelines for achieving objectives and fulfilling the fundamentals of land health are included in the standards. These guidelines dictate that land management practices will be directed to help prevent the introduction and spread of "noxious weeds" on public lands. Guidelines also dictate that "(i)n order to eliminate, minimize, or limit the spread of 'noxious weeds,' " only certified feed and mulch (certified weed seed free) will be permitted on BLM-managed lands. The definition of "noxious weed" from the guidelines is given in section 2.1.6 above. Guidelines restrict the planting of non-native vegetation to cases where native species are not available in sufficient quantities or will not achieve the desired condition. Structural and vegetative treatment and animal introduction in riparian and wetland areas are to be compatible with the capability of the site, including the system's hydrologic regime, and maintenance or restoration of properly functioning condition.

Specific guidelines for management and treatment of non-native, invasive species (NIS) other than plants are not addressed in the Alaska Land Health Standards. However, the focus on retaining natural populations and restoring viability of native plant and animal species supports the management of all NIS.

National BLM policy (IM-WO-2006-073) provides direction that seed purchased by BLM for use on public lands will be weed free. *Partners Against Weeds, An Action Plan for the Bureau of Land Management* (BLM 1996) provides a plan to prevent and control the spread of NIP on BLM-managed lands. Executive Order No. 13112 on Invasive Species states that each Federal agency shall not authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread or invasive species in the United States.

2.1.6.2. Current Condition

Inventory of non-native, invasive plants was conducted on disturbed areas within the Steese NCA in 2002 and in the White Mountains in 2003. During 2005, surveys for NIP in and adjacent to burned areas were conducted within the two planning subunits. Monitoring of sites visited in 2005 was conducted in 2006. The Alaska Natural Heritage Program (AKNHP) was contracted in 2005 to conduct inventory along parts of the Steese (and Elliott) highway(s). In 2006 and 2007, AKNHP was contracted to concentrate on inventory and monitoring along the Steese Highway in and adjacent to areas burned by wildland fire in 2004 and 2005. Table 2.9 lists NIP detected during these surveys.

Limited surveys were conducted by 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 2.9 lists NIP detected for the Fortymile subunit during these surveys.

Table 2.9. Non-native, invasive plants in and adjacent to the Steese NCA and the White Mountains NRA, 2002 - 2007, and Fortymile Subunit, 2005 - 2007. (Species listed are those

that occur in the survey area and are listed by AKNHP as non-native plants of Alaska, last updated 2006.)

Scientific Name	Common Name	Steese NCA and White Mountains	Fortymile Subunit
Achillea millefolium L. sens. str	common yarrow	X	X
Bromus inermis Leyss.	smooth brome	X	X
*Capsella bursa-pastori*s (L.) Medik.	sheperd's purse	X	X
Chenopodium album L.	lamb's quarter	X	X
Collomia linearis	tiny trumpet	X	X
Crepis tectorum L.	annual hawksbeard	X	X
Elymus repens	quackgrass	X	X
Elymus sibiricus L.	Siberian wild rye	X	X
*Erysimum cheiranthoide*s L. subsp. *Chei*	wormseed mustard	X	X
Hieracium umbellatum	Narrow-leaf Hawkweed	X	X
Hordeum jubatum L.	foxtail barley	X	X
Lepidium densiflorum Schrad	common peppergrass	X	X
Lolium perenne L.	perennial rye grass	X	X
Matricaria discoidea DC	pineappleweed	X	X
Melilotus alba Medikus	white sweetclover	X	X
Melilotus officinalis (L.) Lam.	yellow sweetclover	X	X
Phalaris arundinacea	Reed Canary Grass	X	X
Plantago major L. var. *major*	common plaintain	X	X
Poa angustifolia L.	Kentucky bluegrass	X	X
Poa annua L.	annual bluegrass	X	X
Poa compressa L.	Canada bluegrass	X	X
Poa pratensis L.	bluegrass	X	X
Poa subcoerulea Sm.	spreading bluegrass	X	X
Polygonum aviculare L.	knotweed	X	X
Polygonum convolvulus L.	black bindweed	X	X
Prunus padus L.	European birdcherry	X	X
Rumex longifolius DC.	garden dock	X	X
*Sonchus arvensis*L. ssp. *uliginosus* (Bieb.) Nyman	perennial sowthistle	X	X
Spergularia rubra (L.) J.& K. Presl	purple sand spurry	X	X
Tanacetum vulgare L.	common tansy	X	X
Taraxacum officinale Weber	common dandelion	X	X
Trifolium hybridum L.	alsike clover	X	X
Trifolium pratense L.	red clover	X	X
Vicia cracca L.	bird vetch	X	X
Viola tricolor L.	johnny jumpup	X	X
Lappula squarrosa	European stickweed		X

Scientific Name	Common Name	Steese NCA and White Mountains	Fortymile Subunit
Medicago falcata L.	yellow alfalfa		X
Potentilla norvegica L.	Norwegian cinquefoil		X
Tripleurospermum perforata (Merat) M. Lainz	scentless false mayweed		X

No inventory of NIP has been conducted within or adjacent to the Upper Black River subunit. Rare plant surveys have been conducted but no NIP were detected nor was the survey designed to target areas most likely to have NIP.

Twenty-six non-native, invasive insect species have been detected in Alaska, most notably forest pests such as *Profenusa thomsoni* (Amber-marked birch leaf miner), *Fenusa pusilla* (Birch leaf miner), and *Pristiphora erichsonii*(Larch sawfly). The U.S. Forest Service (FS) and the ADNR, Division of Forestry conduct annual surveys of Forest Health Condition. One or more aerial survey flight lines have been flown over planning subunits. Surveys have detected foliar kill from these and other pests in the planning units. BLM does not currently conduct control on forest pests. Currently, no serious non-native, invasive plant pathogens occur in Alaska. FS and ADNR have conducted risk assessments for forest pathogens that, if introduced, could pose a serious threat to forest health in Alaska.

No known invasive aquatic animals have been detected in or adjacent to the planning areas, however, no surveys have been conducted. The Alaska Invasive Species Working Group has established a statewide network to coordinate all non-native, invasive species research, inventory, monitoring and control, with emphasis on aquatic pests. BLM is a member of this working group. Climate change in Alaska may result in an environment more favorable to NIP, aquatic animals, forest pests and pathogens that currently are not able to survive or thrive in Alaska.

2.1.6.3. Trends

At least 120 species of NIP have been detected in Alaska and new invasions are detected annually (AKNHP AKEPIC database). Several dozen more have been identified as likely to survive and reproduce if introduced. The trend for non-native, invasive plants is moving away from the desired condition and BLM Alaska Land Health Standards and Guidelines. The basis of this trend is derived from existing survey data and literature that documents occurrence of plants in Alaska.

Introduction and spread of NIP has been expanding rapidly along highways, rivers, within communities and at disturbed sites throughout Alaska. Longer frost free seasons and other climate change variables are likely to increase the ability of NIP to germinate and establish in the planning area. Many NIP that were introduced to stabilize disturbed areas, as forage crops or as ornamentals have escaped and become monocultures despite confidence that they could not survive beyond the enhanced growing conditions of cultivation. Examples include *Vicia cracca* (bird vetch), *Melilotus alba* (white sweetclover), *Lythrum salicaria* (purple loosestrife) and *Linaria vulgaris* (yellow toadflax), all of which are species of greatest concern for Alaska (AKEPIC 2005).

2.1.6.4. Forecast

Non-native, invasive species (NIS) are currently managed on and adjacent to BLM-managed lands through public awareness, suggested mitigation or stipulations in land use permits, and control efforts along highways at key river crossings. The current resource management plans for the planning area do not address NIS. Efforts to manage NIS on public lands are currently driven by national policy, Executive Orders and other guidance. NIS, especially plants, will continue to spread and new species become introduced given the lack of management decisions for NIS in existing plans and changes in land use such as increased traffic, increased off-road vehicle travel, and new uses, such as use of pack animals for hunting and nature trips. The introduction and spread of NIS will be slowed and in some cases halted if new planning decisions allow for integrated pest management and other tools, such as early detection and rapid response. Current staffing and project funding in the Fairbanks District Office are not adequate to achieve desired NIS management efforts comparable to other land managers or BLM states.

2.1.6.5. Key Features

Non-native, invasive species (NIS) as an effected resource defies the logic with which other resources are analyzed. The desired condition for NIS is to prevent introduction and spread of these pathogens, plants and animals. Therefore a balance among decisions for some resources, such as recreation and mining, must be reached through mitigation measures and decisions to prevent introduction and spread of these species. NIP generally become established in disturbed areas. NIP have been detected throughout the Steese, White Mountains, and Fortymile subunits at sites disturbed by mining and recreation, and along established roads, highways and trails. Some species, such as *Melilotus alba* (white sweetclover) have adapted to the environment sufficiently to invade undisturbed areas.

NIS are introduced opportunistically, as hitchhikers on vehicles, equipment or in supplies brought from outside the state or country; or intentionally, as in the case of ornamental plants and crops. Non-native animals and pathogens occur in Alaska, and likely within some of the planning subunits, especially the more accessible areas, however little focus is placed on these species and NIS, plant or otherwise, are not addressed in current resource management plan decisions.

Management decisions for NIS will be included in the current planning efforts and will include guidance on the use of weed free forage and mulch, weed free seed, vehicle cleaning and other measures designed to help prevent the introduction and spread of any NIS. Partnerships with adjacent land managers will continue to be an emphasis for the prevention and control of NIS. Areas particularly vulnerable to introduction or spread of NIS, such as mining and recreation sites and trails, will be particularly important in the efforts to protect Federal public and other lands from NIS.

2.1.7. Wildlife

2.1.7.1. Indicator

Wildlife habitat management is a subactivity (6500) of the BLM manual and includes management of wildlife habitat on public lands. Except in special cases, the responsibility for managing wildlife populations traditionally rests with the State of Alaska. Marine mammals, migratory birds, and

federally-listed threatened or endangered species are, at least in part, the responsibility of the Federal government. In Alaska, subsistence harvest management is also a BLM responsibility.

The overall objective of wildlife habitat management on public lands is the conservation and rehabilitation of fish, wildlife, and plant resources consistent with multiple use management principles. It is BLM policy to manage habitat with emphasis on ecosystems to ensure self-sustaining populations and a natural abundance and diversity of wildlife, fish, and plant resources on public lands.

Additional program specific goals are found in the 6500 Manual series (BLM 1988). The goals of the wildlife habitat management program are: to ensure optimum populations and a natural abundance and diversity of wildlife resources on public lands by restoring, maintaining, and enhancing habitat conditions; ensure that big game and upland game species on public lands are provided habitat of sufficient quantity and quality to sustain identified economic and social contributions to the American people; help perpetuate a diversity and abundance of waterfowl for the Nation by managing the wetlands and other habitats on the public lands that are of importance to the maintenance of waterfowl; provide suitable habitat conditions for birds of prey on public lands through the conservation and management of essential habitat components, including prey species, especially in areas where birds of prey concentrate during some period of the year, or in important habitats where populations are suppressed; and manage riparian areas to achieve a healthy and productive condition for long-term benefits and values.

Alaska Statewide goals are outlined in The Alaska Statewide Land Health Standards (BLM 2004). One goal that relates to wildlife is to ensure that habitats support healthy, productive, and diverse populations and communities of native plants and animals (including special status species and species of local importance, e.g., those used for subsistence).

In the planning area, management focuses on conservation efforts rather than rehabilitation because few if any resources are impacted enough to justify rehabilitation work. In addition to emphasizing wildlife habitat management which supports the State of Alaska's wildlife population management objectives, the Eastern Interior FO supports wildlife population monitoring to support the Federal subsistence management program. Efforts have been made over the past 20 years to inventory and monitor population, distribution and habitat of some key wildlife populations. Establishment of a baseline will allow future monitoring to indicate declines in populations or habitats and aid in identifying and minimizing impacts. Because monitoring is typically limited in scope for any given species or habitats, few quantitative indicators are possible. In general, populations of wildlife in the planning area appear to be fluctuating within what are likely natural limits. Exceptions probably include several migratory bird species that are affected by impacts on seasonal ranges or migration routes occurring outside of Alaska. Most monitoring is conducted in conjunction and cooperation with the ADF&G.

Indicators:

One indicator is an Alaska Land Health Standards Objective: Essential habitat elements for species, populations, and communities are present and available to the extent they are consistent with the potential/capability of the landscape.

Other potential indicators for wildlife include: distribution (animals are widely distributed across all their traditional range); population levels and sex/age parameters; animal weights and other indicators of nutritional status, such as twinning rates; proportion of lichen in fecal samples

(caribou); sufficient old-age spruce stands for winter range (caribou); browse transects; forage monitoring; proportion of habitat disturbed; miles of roads/trails per square mile; acres of timber harvest; natural fire regime; and changes in habitat due to climate. Select one or more indicator species, such as a species sensitive to proposed activities and management alternatives or an apex predator.

2.1.7.2. Current Condition

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 (10-30 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. Telemetry studies in the White Mountains NRA and Steese NCA showed that most females moved to lowland calving/summer ranges in Minto Flats, Tanana Flats, Yukon Flats and the Medicine Lake area (Hobgood and Durtsche 1990, Herriges, BLM unpublished data). One female annually moved from Preacher Creek to Wood River Butte on Tanana Flats, a distance of approximately 100 miles. Although bulls were captured and collared mostly in remote and inaccessible areas, their long-distance travels often brought them into areas reached by hunters. In a recent analysis of habitat selection (Nielson 2007), the presence of 20-30 year burns was one of the primary factors explaining probability of selection by moose. The probability of selection by moose was also maximized for a location 600-1,000 meters in elevation, within a diverse mosaic of vegetation cover types, within areas with deciduous tree or tall shrub cover, and close to streams and forest cover.

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 in most areas, 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 20E (Fortymile), populations were high in the 1950s and early 1960s following Federal predator control (reaching a minimum of 12,000 moose); current moose numbers in Unit 20E (2006) are estimated at 3600-5200 moose or 0.45-0.64 moose/mi^2 Harvest is limited by little access and bull:cow ratios are generally high (above 40 bulls:100 cows; Gross 2006). Unit 20E 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 25C (including the White Mountains NRA and Steese NCA) averaged 0.65 moose/mi^2 in 2007. Systematic population surveys in Unit 25B (Upper Black River subunit) have not been conducted, but populations are considered to be low and probably declining. Moose densities in unit 25D are very low (0.2-0.3/mi^2 in 2001, ADF&G 2002). The Yukon Flats and surrounding areas (Units 25A, B, and 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 using scientific information and traditional knowledge in management decisions.

Moose browse surveys have not been conducted in Unit 25C or 25B, but observations in the field indicate that browsing is typically light. The proportion of current annual browse growth (CAG) removed by moose was low (~9%) in Unit 25D (Yukon Flats) and nutritional status was apparently high as indicated by high (~62%) twinning rates. Unit 25B is likely similar to 25D. In 20E, CAG removal was moderate (22%) and twinning rates correspondingly lower (~35%) (Paragi et al. 2008.).

Caribou

Five caribou herds occupy the planning area at least seasonally. The White Mountains and Fortymile caribou herds occupy the planning area year around, while the Porcupine and Nelchina herds occupy the planning area primarily in winter. The MacComb, Mentasta, and Chisana herds also range into the planning area, but do not utilize BLM-managed lands as a significant portion of their range (Map 2.4 Caribou Distribution).

White Mountains Caribou

The White Mountains Caribou herd was first recognized in the late 1970s and was thought to number 100-200 caribou (P. Valkenburg, pers comm, in Seaton 2007). At that time it was believed to be a remnant of the Fortymile herd, as it occurs within the historic range of the Fortymile herd, but it is now considered likely that it has long been a separate herd. Preliminary genetic studies indicate that, although similar in some respects to the Fortymile herd, the White Mountains herd may be closely related to southern Yukon woodland caribou herds (Zittlau 2004). The range of the White Mountains herd is centered on the White Mountains NRA and north unit of the Steese NCA (Map 2.4 Caribou Distribution). 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 these could be considered part of the White Mountains herd. In recent years, the Fortymile caribou herd has moved north and west of Eagle summit in the fall and winter, overlapping the White Mountains range to a greater extent. Although calving has been documented in almost the entire range of the White Mountains herd, concentrated calving occurs in the highland areas surrounding Lime Peak. 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 are consistently high in this herd, indicating that nutritional status is high and that range quality is good. Some baseline indication of caribou habitat was obtained in 2001-2003 fire history studies: little indication of grazing was seen in inventory plots, on average.

Fortymile Caribou Herd

The Fortymile herd range is centered in the Eastern Interior 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. The current range is much smaller (about 25% of the historic range), but includes most of the planning area south of the Yukon River and extends into Canada. In the early 1900s the Fortymile was a much larger herd (over 500,000 caribou estimated in 1920, Murie 1935), and regularly calved in the White Mountains (including the western portion of the north unit of the Steese NCA). It declined to a low of near 6,000 caribou in the mid 1970s. In 1995, a coalition of citizens and agencies came together with the goal of recovering the population. During the five year life of the plan, the herd about doubled and now numbers approximately 41,400 animals in 2006 (Gross

2007). The latest estimate is 39,000 animals (Gross pers comm., December 2008), indicating a slight decline.

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 72-81% of fecal samples and mosses only 8%, indicating excellent range conditions (Gross 2007). (Overgrazed ranges result in higher proportions of mosses and vegetation other than lichen [Boertje 1984]). Although weather conditions cause fluctuations in population growth, predation has been a major factor in limiting recovery of caribou (Boertje and Gardner 2000). Predator control (including methods and means of harvesting bears and wolves, and aerial shooting of wolves by 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 the south unit of the Steese NCA, the Fortymile NWSR corridor, and other scattered BLM-managed lands in the Fortymile area.

Porcupine Caribou Herd

The Porcupine caribou herd utilizes the Upper Black River subunit during winter (Map 2.4 Caribou Distribution). 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. 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 winter range, but this habitat may be important at some population levels or especially in certain years when weather conditions may be more favorable here than in other areas. Habitat in this remote subunit is essentially undisturbed by human activity. Lightning-caused wildfires have been more frequent in recent years. These fires impact caribou winter range by reducing forage lichens for at least 50 years.

Other Caribou Herds

The Nelchina caribou herd has in recent years utilized the southern portion of the Fortymile caribou herd winter range (Map 2.4 Caribou Distribution). Harvest regulations are modified (within season when necessary) to limit harvest of the Nelchina herd in this area. We might assume that this indicates that this area is superior quality winter range in comparison to the Nelchina herd's traditional winter range and this is supported by ADF&G data--weights of Nelchina calves that winter in the Fortymile area were significantly heavier than calves that wintered in adjacent Units 11 and 13 (B. Dale, in Gross 2007).

The Mentasta Caribou Herd occupies land within the northern half of Wrangell-St. Elias National Park and Preserve. The historical range (Map 2.4 Caribou Distribution) extends into the planning area in Unit 11 and overlaps with the Fortymile herd range in southern Unit 20E. 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.

The MaComb Caribou Herd occurs within the planning area, but does not utilize BLM-managed lands (Map 2.4 Caribou Distribution).

Dall Sheep

Dall sheep are some of the most high-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 2.5 Dall Sheep Distribution). 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 is the western edge of the Yukon-Tanana Uplands and supports 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. In a genetics study (Worley et al. 2004) Yukon Charley Dall sheep shared similarities with central Alaska Range sheep and sheep well west into the Ogilvie Mountains in Yukon Territory. Genetic analyses of White Mountains sheep have not been conducted.

Sheep likely occasionally utilize portions of the higher portions 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 have been reported to have supported Dall sheep and sheep hunting in the recent past (Yukon Area Plan, Caulfield 1983), but there are no other records of sheep in this area. Sheep or sheep sign were not observed in 1991 and 1997 BLM field trips in the area.

In the Fortymile River 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 Preserve. In the Glacier Mountain area, which is designated as a controlled use area under State hunting regulations prohibiting 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 NCA. 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 NCA.

An average of 309 sheep were counted in aerial surveys 1997-2002 in Yukon Charley Preserve (including small numbers that utilize BLM lands near Mount 5580 in south Steese NCA 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 1200 and 893 (74%) of this population was dependent on BLM lands. This will decrease somewhat if lands around Mt. Harper and Glacier Mountain are conveyed. If we estimate that 80% of sheep are observed in these aerial population surveys, the average number of sheep in the Yukon-Tanana Uplands during 1999-2002 could be roughly estimated at 1500.

Dall sheep in the White Mountains may suffer from deficiencies or imbalances of mineral intake. A proportion of males (11/56 in a 2000 survey) in the Limestone Ridge portion of the White Mountains suffers from breakage of horns near the bases (often at the tip of the bony horn core). This breakage is not known from any other mountain sheep populations in North America. In addition, two of the first three animals captured in the recent radiotelemetry study suffered broken backs. Other sheep in the population have shown unusually high rates of persistent struggling during handling and resulting capture myopathy. This could also be related to mineral and nutritional status. Tissue sample analyses indicate possible deficiencies in selenium, copper, and zinc.

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 Mt. 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. West Point sheep regularly travel to lower Puzzle Gulch and Big Windy Hot Springs, which exposes them to predation risk while traveling through rounded terrain. There are also mineral licks identified in the Fortymile area for sheep (as well as caribou and moose).

Grizzly (Brown) Bear

Brown bears are widely distributed within the planning area. Biological requirements dictate what parts of their home range are preferred at different times of the year. Brown bears are only active for half of the year, denning within their home ranges from period October to April (or longer in the case of females with cubs). When not hibernating, grizzlies occupy all available habitats within their home range to take advantage of seasonably available food sources. Population and local densities vary depending on the productivity of the habitat and seasonal availability of forage and prey. The current condition of brown 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 20E, 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/1000 km2. Bears were least abundant at stations within large areas burned in 2004 and 2005. (Gardner et al 2007). Harvest of bears in the planning area is generally light and, with the possible exception of the 20E predator control area, probably has little impact on population levels.

Black Bear

Black bears occur throughout the planning area and typically prefer forested habitats. Within the White Mountains NRA and Steese NCA, 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. In a gravel bar track survey of the upper portion of Beaver Creek in the White Mountains, black bear tracks were seen at only two locations (Herriges, unpublished data). Black bears may be also be relatively abundant in portions of the Upper Black River planning subunit. Hobgood (1991) reported abundant black bear sign along the Salmon Fork of the Black River. Black bears are only active for half of the

year, hibernating from October-April. Black bears occupy all available habitats within their home range, taking advantage of seasonably available food sources (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

The wolf occurs throughout mainland Alaska. Presently wolves are common over much of the state with densities as high as one wolf per 25 square miles in favorable habitats. 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/or 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 (e.g.. Fairbanks area) or direct control activities. ADF&G estimated the population of wolves in Unit 25C to be 75-125 individuals in 10-20 packs and 252-313 wolves in 26-42 packs in Unit 20E in the 2004-2005 regulatory year.

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. Coyotes are uncommon in the planning area, but are increasing in portions of Interior Alaska. Lynx is a BLM sensitive species and is discussed in the wildlife special status species section. Wolves are discussed above. 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 ADF&G wildlife biologists rely upon annual trapper harvest reports and opinions, and field observations by department personnel to gauge furbearer status and trend information. The price paid for animal pelts is the greatest determining factor in trapper harvest effort, and subsequently affects harvest. Reporting of harvest is required for only a few species, those required to be sealed (marked with metal tag) by ADF&G employees (lynx, river otter, wolf, wolverine). Furbearer harvest monitoring is generally at a level of intensity sufficient to monitor and ensure harvest is not unduly depressing populations.

Wolverines are generally distributed throughout Interior Alaska, except in the vicinity of Fairbanks (Gardner 2007). 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. Estimated probabilities of occurrence were greater than 20% for almost all units in the planning area, except for several individual or pairs of units: upper Birch Creek/East Fork Chena River area, upper N. Fork Preacher Creek, and a unit north and east of Snowy Peak in the Upper Black River subunit. Reported wolverine harvest in units 25B, 25C, and 20E has averaged 10, 1.4, and 5.9 per year for the 9 years from 1997-1998 through 2005-2006 regulatory years.

The river otter is widely distributed across Interior Alaska. River otter tracks are locally common on sections of Beaver Creek 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 (otters are

rarely targeted by trappers), with reported harvest averaging less than one otter per year in each of units 25B, 25C, and 20E during 1997-1998 through 2005-2006 regulatory years (ADF&G 2007).

The beaver is widely distributed throughout forested areas of Alaska. Water environments having greater than 2-3 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 harvest 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 25C and 20E due to their relative abundance and fur value. Sealing is not required and so definite harvest figures are not known. Trapper questionnaire returns (which are voluntary and so reported totals are only a fraction of actual harvest) report harvest of seven, 139, and 162 marten in units 25B, 25C and 20E in the 2004-2005 regulatory year.

The coyote was first noted in Alaska shortly after the turn of the 20th century in Southeast Alaska. Populations expanded northward into the upper Tanana Valley and the population peaked in 1940 and have since declined in many areas (ADF&G 1994). 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 in the southern portions of the White Mountains since the early 1990s 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.

Muskrat are found throughout Alaska's mainland, except the Arctic Slope north of the Brooks Range. Muskrat habitat is most abundant in the broad floodplains and deltas of major rivers and in marshy areas dotted with numerous small lakes—habitats not common in BLM lands in the planning area. No specific information is available on population sizes or trends for muskrat.

Mink are found throughout Alaska except Kodiak Island, the Aleutian Islands, the offshore islands of the Bering Sea, and most of the Arctic Slope. Mink are aggressive carnivores and will consume virtually everything that they can capture of manageable size (ADF&G 1989). Little is known of the status of mink in the planning area. Within the interior administrative ADF&G region (III), 127 mink were reported harvested in 2004-2005 regulatory year in trapper questionnaires, but none in units 25B, 25C, or 20E.

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 wildfire due to positive effects on small prey populations.

Arctic ground squirrel, hoary marmot, and pika

Hoary marmot and pika are common in the planning area in alpine habitats. However, neither species were observed in the alpine limestone habitats of the Keele Range in the far northeastern portion of the planning area in 2007 field work conducted by BLM (Herriges, unpublished data).

Arctic ground squirrels are notably absent from most of the Yukon-Tanana Uplands. Small populations occur at atypically low elevations near Central and in portions of Yukon Flats. Ground squirrels are absent from the alpine habitats in which they are typically abundant elsewhere in

other mountainous portions of Alaska. The absence of a major small prey animal likely has major influence on the ecology and abundance of predators in the Yukon-Tanana uplands (as well as their other prey), but this has not been investigated. Nutrient cycling is also affected by the absence of this normally abundant herbivore, which creates and maintains burrow systems. The absence of ground squirrels may benefit sheep populations through reduced populations of predators, such as grizzly bear, coyote, and nesting golden eagles.

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, these 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 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). Those considered special status species are discussed in more detail in that section. Because 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 minimal.

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 NCA 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 may be becoming more common.

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. More detailed information on those identified as special status species is provided in that section. 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 minimal.

Passerine (perching) Birds

According to ADF&G, 471 bird species have been positively identified in Alaska (Wings over Alaska, http://www.birding.alaska.gov/). 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 or birds of conservation concern are considered in further detail under elsewhere in this document. Because 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.

Bird Species of Conservation Concern

In addition to sensitive birds discussed in the Sensitive Status Species sections, there are several other species which are listed by the FWS as Bird Species of Conservation Concern and/or are "featured species" in Alaska's wildlife action plan (ADF&G 2006). Interim guidance has directed BLM planners to consider these species of concern during the planning process. These species are listed in Table 2.10. These species are designated for a variety of reasons. They may be small in population or range, showing a decline in populations in part or all of their range, dependent on habitats viewed as susceptible to human disturbance or development, or considered worthy of more intensive monitoring due to any of these factors. In addition to Alaska "featured species" and the FWS Bird Species of Conservation Concern (BCC), species which the *Partners In Flight* organization has designated as Alaska Priority Species are listed in this table.

Table 2.10. Bird Species of Conservation Concern in the Eastern Interior Planning Area

Bird Species of Concern	BLM -AK [a]	FWS BCC[b]	FWS BCR4[c]	AK SWCS[d]	Alaska State[e]	BPIF[f]
Gray-cheeked Thrush	Sensitive				SOC	Priority
Long-tailed Duck	Sensitive			featured		
Olive-sided Flycatcher	Sensitive	BCC/N		featured	SOC	Priority
Trumpeter Swan	Sensitive	BBBDC, interior pop				
Blackpoll Warbler	Sensitive	BCC/R, region 7		featured	SOC	Priority
Townsend's Warbler	Sensitive			featured	SOC	Priority
American peregrine falcon	Sensitive	BCC/N	BCR4	featured	SOC	
Red-throated Loon	Sensitive			featured		
Harlequin Duck	Sensitive					
Black Scoter	Sensitive	GBADC		featured		
Surf Scoter	Sensitive	GBADC		featured		
Buff-breasted Sandpiper	Sensitive	BCC/N		featured		
Smith's Longspur		BCC/N		featured		Priority
Rusty Blackbird				featured		Priority
Wandering Tattler				featured		
Solitary Sandpiper		BCC/N		featured		
Short-billed Dowitcher[g]		BCC/N	BCR4			
Hudsonian Godwit[g]		BCC/N	BCR4			
American Golden-plover		BCC/N	BCR4			
Northern Harrier		BCC/N	not on Region 7 list	featured		
Short-eared Owl		BCC/N	not on Region 7 list	featured		
Surfbird		BCC/N	BCR4			
Arctic tern		BCC/R region 7	not listed in BCR4	featured		
Arctic warbler[g]		BCC/R region 7	not listed in BCR4			
Whimbrel[g]		BCC/N	BCR4			
Gyrfalcon						Priority
Sharp-tailed Grouse						Priority

Bird Species of Concern	BLM -AK [a]	FWS BCC[b]	FWS BCR4[c]	AK SWCS[d]	Alaska State[e]	BPIF[f]
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[g]						Priority
[a] Species listed by BLM in AK as sensitive.						
[b] Species listed as a Bird of Conservation Concern (BCC) in US (N) or portion (region 7 = AK)						
and Game Birds Above Desired Condition (GBADC).						
[c] Species listed as a Bird of Conservation Concern in Bird Conservation Region 4 (interior AK) (BCR4).						
[d] Species listed in the Alaska State Wildlife Conservation Strategy as a featured species.						
[e] State of Alaska designated species of concern (SOC).						
[f] Species listed by the Alaska Boreal Partners in Flight as Priority Species in AK.						
[g] Not likely found in planning area in significant numbers						

2.1.7.3. Trends

Moose

Although moose in the planning area are generally thought to be limited by wolf and bear predation, large wildfires are generally considered to result in population increases due to the resulting increase in palatable browse. Maier et al. found that higher moose densities across several areas in Interior Alaska were associated with 11-30 year old burns. Similarly, a Resource Selection Function developed for the Steese/White Mountains (Nielsen, 2007) indicated that 10-20 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 have been reduced from complete suppression, to predominantly 'limited" fire suppression. In addition, weather conditions have resulted in record acreages burned in recent years. This may result in increase moose populations in the planning area. In the Unit 25C White Mountains NRA and Steese NCA moose survey area in the almost 50 year period from 1955-2003, 12.4% of the area was within recorded burn perimeters. Burn perimeters covered 25.2% of the area. Large fires also occurred during 2004 and 2005 in the Fortymile area and in the Black River area. Between 1997 and 2007, populations in the Unit 25C moose survey area increased from 2270

(90% confidence interval = +/- 15%) to 3019 (+/- 24%; distribution shifts and lack of stratification survey flight caused large confidence interval in 2007). Among the 47 survey units which were sampled in both surveys, all increases of five or more moose counted occurred in units which were at least partially burned since 1994; counts in none of the 11 completely unburned units increased by more than four moose.

Caribou

White Mountains Caribou Herd

Fall, winter, and late winter range shifted in the 1990s from west of Beaver Creek (the headwaters of Victoria Creek, Hess Creek, and Tolovana River; Durtsche and Hobgood 1990) to east of Lime Peak (upper Preacher and N. Fork Preacher creeks) (Herriges, unpublished data). This shift may have occurred in response to wildfires in the Victoria and Hess Creek drainages in 1988 and 1991.

Fortymile Caribou Herd

During the 1920s the Fortymile herd (then known as the Steese-Fortymile 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 5740-8610 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, Canada. Since the early 1970s, the herd's range has remained about 19,300 mi^2 (50,000 km^2), less than 25% of the range thought to have been used by the herd during the 1920s (Gross 2007).

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 (Nov. 1997 - May 2001) and private wolf trapping as well. 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 39,00 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 and harvest objective of 1,000-15,000 caribou established under intensive management regulations (Gross 2007). In the last 5-10 years, the herd has expanded its range into more of the traditional range, likely as a result of an increasing population but also possibly due to recent large fires.

Porcupine Caribou Herd

Warming climate is expected to increase the area burned each year and this will likely reduce the area of available winter range in the Upper Black River subunit. Whether this impacts the herd depends on extent of other winter range available.

Dall Sheep

Aerial surveys of the White Mountains Dall sheep populations have occurred since 1970. 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% 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. In 2005, radio collared sheep allowed us to estimate the proportion of the sheep in the population observed during surveys. Twenty-six (81%) of the 32 radio collared sheep were observed during the survey. Following Chapman (1951), a total population estimate would be 627 sheep, with a 95% confidence interval of 532 to 722. Lamb production and/or early survival in the White Mountains tends to be relatively low in comparison with other Dall sheep populations in Alaska. Ratios of lambs per 100 “ewelike” animals (includes some yearling rams) averaged 27:100 during 1970-2000 (Seaton 2005). Harvest of rams averaged 8.5 per year from 1992-1993 through 2003-2004 (Seaton 2005).

Gray Wolf

Wolf populations in Unit 20E have been the subject of several population control actions but have rebounded following the end of 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 ADF&G. Beginning in 2005, the Fortymile Predator Control Area was expanded to include the South Fork of Birch Creek in the Steese NCA. This area was later expanded to it’s current size which includes all of the south unit of the Steese NCA. The remainder of the planning area supports lightly harvested wolf populations which presumably fluctuate largely with populations of prey.

Other species

No trend information is available for most wildlife species. Habitat remains relatively undisturbed in the planning area and so most populations likely fluctuate within normal levels, with the exceptions of some migratory birds which are impacted on ranges outside the planning area.

2.1.7.4. Forecast

Moose

Increases in moose populations over the next 10-30 years are likely to occur throughout the planning area in response to recent fires. Climate change is predicted to result in long-term increase in fire frequency (Rupp et al. 2006). Young seral stages 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 production may be reduced. Currently, much of the route used by radio collared moose is blocked with chain link fencing along the Richardson Highway.

Caribou

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 area as tree-line rises and may experience drying which could decrease forage quality; while 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, if reductions in winter snow accumulations occur, this could in some conditions possibly benefit caribou by improving energy balance.

White Mountains Caribou Herd

We have limited knowledge of the long-term population dynamics and habitat relationships of caribou herds. However, based on recent observations of caribou herds, the White Mountains herd is likely to remain a small herd with limited range. There is some possibility that portions of the herd could be incorporated into the Fortymile herd if the herd ranges continue to overlap more significantly. But during the last 100 years the White Mountains has been inhabited seasonally by a large herd (ie. Fortymile), and apparently year-round by a small herd and this is likely to continue.

Fortymile Caribou Herd

Weather conditions and their impact on nutritional condition, productivity, and survival interact with predation by wolf (and to a lesser extent bear) to determine trends in the Fortymile Caribou herd. However, Fortymile caribou habitat is largely intact and considered in good condition, and there is considerable potential for range expansion, and so population growth can be expected. Under restrictive human harvests (850 caribou harvest quota currently; 1000 caribou quota at population over 50,000) the Fortymile herd size can be expected to be in a generally positive trend, although periods of decline due to weather are possible. Wolf control can be expected to increase growth rates if sufficient numbers of wolves are removed.

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%) 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 which could limit winter range availability and quality. Habitat management decisions made by BLM and other land managers within the historical range of the Fortymile herd will affect potential for future herd growth.

Dall Sheep

Climate change may have a major impact on Yukon-Tanana sheep populations. Severe winter weather (especially deep snows) can drastically reduce sheep populations. Changes in this factor

as a result of climate change can have a large affect. Periods of warm weather during winter could result in icing conditions. Changes in precipitation patterns can affect sheep populations, including deeper or shallower snowpack and drier or wetter growing seasons. Yukon-Tanana uplands Dall sheep populations, which subsist on scattered and relatively low elevation ranges surrounded by forestlands, could be impacted by a predicted rise in treeline. On the other hand, increased fires may be beneficial by reducing forests in some low elevation habitats.

Most of the sheep habitat in the Yukon-Tanana Uplands occurs in the "primitive" management areas of the White Mountains NRA and Steese NCA 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 from motorized vehicles. As with caribou, habitat conditions and availability will determine the limits to growth of sheep populations. The habitat across most of the herd's range is largely intact and undisturbed. Habitat management decisions will determine future extent of habitat maintenance. Roads and OHVs in sheep ranges could potentially impact sheep populations.

Wood Bison

Although wood bison have been absent from Alaska for hundreds to thousands of years, the ADF&G has imported wood bison from Canada and is working towards release of bison into the Minto Flats area as early as 2010. They are also proceeding with plans to subsequently introduce wood bison onto Yukon Flats as soon as possible . The most likely introduction site is near Birch Creek Village, which is 30 miles north of the Steese NCA (R. Rogers, ADF&G, pers comm. 2008). The bison are expected to focus use in the lowland sedge and grass wetland habitats of the flats. Plains bison herds in Alaska have generally stayed fairly close to their introduction sites. However, it is not unlikely that individual bison or small groups could move from the Birch Creek Village area into the northern White Mountains NRA or Steese NCA. The wood bison herd recently established in the Yukon, Canada (Aishihik Herd) unexpectedly began utilizing high elevation habitats in summer and winter. This experience has shown that bison may utilize uplands more than previously expected, and so it is possible that some wood bison could establish a tradition of use, at least seasonally, of BLM lands in the planning area. The likelihood of this occurrence is somewhat dependent on the herd size in relation to available habitat in the Flats; this can be controlled via harvest. Maintaining a small herd through harvest will reduce the likelihood of dispersion into the White Mountains and Steese areas.

Grey Wolf

Wolf numbers will fluctuate with numbers of prey (primarily caribou and moose), except in predator control areas. Dog lice was diagnosed in unit 20A 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.

2.1.7.5. Key Features

Due to the overlap of priority wildlife resources, the highlands of the White Mountains NRA and adjacent Steese NCA (most of which is currently classified as primitive) represent key wildlife habitat (Map 2.6 White Mountains, Current ROS Classification and Map 2.7 Steese NCA, Current

ROS Classification. Caribou calving and post-calving habitat, Dall sheep year-round habitat and mineral licks, gyrfalcon and peregrine falcon nesting habitat, and rare plant species are present. The area also contains much moose habitat, including rutting areas. In addition to the year-round use of the White Mountains Caribou herd, this area contains historical calving and post-calving habitat for the Fortymile caribou herd and the opportunity for future calving in the White Mountains should be assured.

One of two special values of the Steese NCA recognized by Congress at designation was caribou range. The north Steese contains calving, post-calving and year-round range for the White Mountains caribou herd, and historical calving and post-calving range for the Fortymile herd. The Fortymile herd has, in recent years, begun again ranging into the north Steese unit during fall and early winter and has also extended its range into the White Mountains NRA. The south unit of the Steese NCA is annually utilized by Fortymile caribou for calving (S. Fork Birch Creek area) and for late summer through winter habitat (remainder of unit). The Clums Fork drainage and an area to the east of this was regularly used by the Fortymile herd for calving for 16 years in the late 1960s and 1970s (Valkenburg and Davis 1986) and may also see renewed use. The areas of the White Mountains NRA and north Steese NCA which were historically used by the Fortymile herd for calving should be managed to allow future calving by this herd. The Puzzle Gulch/Big Windy Hot Springs area of the south Steese unit contains two important mineral licks for the West Point population of Dall sheep, and for moose and probably caribou. It is an area that seems to receive consistent use by caribou, and also contains gyrfalcon nesting habitat. The Big Windy Hot springs contains undeveloped thermal springs and is designated as Research Natural Area. This Big Windy/Puzzle Gulch area was considered in the original Steese planning effort for designation as a larger Research Natural Area. In that plan (BLM 1986), a portion of the area was designated in a management unit which was not open to mineral entry. Special designation of this area should be considered in the current plan.

Portions of the Fortymile River and the mid to lower portions of Birch Creek (including lower South Fork) contain significant nesting densities of peregrine falcons. The Salmon Fork and a portion of the Grayling Fork of the Black river support populations of nesting bald eagles and peregrine falcon. These areas should be recognized in management strategies.

Calving and post-calving caribou habitats are recognized as the most sensitive habitats (Fortymile Caribou Planning Team), and special management should be considered for all BLM-managed lands which contain these habitats. Although radiotelemetry data is most often used to delineate seasonal caribou habitats, it should be recognized that this technique has been widely used for only the past 20-25 years, and that large shifts in caribou distribution do occasionally occur. Management decisions will need to account for this variability.

2.1.8. Special Status Fish

See section 2.1.10.1, Special Status Plants for more complete discussion of what constitutes special status species under BLM policy.

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. As defined in the Sustainable Salmon Fisheries Policy for the State of Alaska, a yield concern is “a concern arising from a chronic inability, despite the use of specific

management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs" (5 AAC 39.222.).

In 2001, both the Alaska Board of Fisheries and the Federal Subsistence Board responded to proposals to increase subsistence fishing opportunities by removing Beaver Creek from the list of waters closed to subsistence fishing. The Board of Fisheries instituted a year-round gillnet mesh size restriction of 3 inches to protect spawning salmon, while the Federal Subsistence Board applied the 3-inch mesh restriction from June 15 to September 15. This relaxation of subsistence fishing regulations also contributed to BLM's move to list Beaver Creek Chinook salmon as a sensitive species. Under BLM's special status species policy, the BLM is required to ensure that its actions are consistent with the conservation needs of sensitive species and to minimize the need to list any sensitive species under the provisions of the Endangered Species Act (BLM Manual 6840).

2.1.8.1. Indicator

As described in section 2.1.5.1, the maintenance of self-sustaining fish populations is a common indicator of population health. The relative health of Beaver Creek Chinook salmon may be assessed to some extent by the health of Yukon River Chinook salmon as a whole. Other indicators of Chinook salmon population health in the Beaver Creek watershed include the quantity and quality of available habitat, riparian habitat proper functioning condition, and water quality. These indicators are discussed in Section 2.1.6.1.

2.1.8.2. Current Condition

The BLM monitored Chinook salmon and chum salmon escapement into Beaver Creek for four years between 1996 and 2000 using a resistance board weir and trap. No data were collected in 1998 due to high water. The average escapement of Chinook salmon into Beaver Creek over the four years of the BLM study was 187 fish (standard deviation = 115) (Collin and Kostohrys 1998; Collin et al. 2002). Although the Chinook salmon population is small, it is considered to be self-sustaining.

The weir was located approximately 5 river miles (8 km) upstream of the Victoria Creek confluence with Beaver Creek. Due to high water and other logistical problems, and the possibility that some spawning activity may have occurred downstream of the weir, these escapement numbers are considered to be conservative (Collin and Kostohrys 1998). Nonetheless, 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).

2.1.8.3. Trends

A period of four years is not considered sufficient to establish salmon escapement goals (Brannian et al. 2006), or to assess population trends. Aerial and boat surveys were conducted sporadically by various agencies between 1954 and 1982 and resulted in a few sightings of Chinook and chum salmon in Beaver Creek, but no population numbers were reported (Barton 1984). Lacking historical observations of the Chinook salmon population in Beaver Creek, evaluating trends is very difficult.

2.1.8.4. Forecast

The White Mountains NRA is currently withdrawn from locatable mineral entry and leasing and cannot be opened to locatable mineral entry through this RMP/EIS. As a result, significant fisheries habitat alterations due to mining activities in the Beaver Creek watershed are not anticipated in the near future. However, increased recreational activity, particularly OHV use on trails near streams or traversing streams, may destabilize stream banks and impact stream sedimentation and turbidity in Beaver Creek.

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 remote access to Beaver Creek. Only very small numbers of Chinook salmon have been documented in areas of the Beaver Creek watershed that are accessible by road.

2.1.8.5. Key Features

The life history of Chinook salmon is described in section 2.1.5.4.1 Key Features. Documentation of spawning areas used by Chinook salmon in Beaver Creek is sparse. A 1975 survey reported possible Chinook salmon redds approximately 5 miles (8 km) downstream of Big Bend in Beaver Creek. A 1976 aerial survey reported that braided channels 10-15 miles (16-24 km) downstream of the Victoria Creek confluence appeared to be good spawning areas (Barton 1984). A survey by BLM employees in 2002 reported Chinook salmon spawning just downstream of the Montana Creek confluence, and another spawning aggregation just downstream of the Victoria Creek confluence (T. DuPont, BLM, Fairbanks, AK, personal communication). These documented spawning locations may represent just a few of the areas actually used by Chinook salmon for spawning in the watershed.

The tannic nature of the water in Beaver Creek is partly responsible for the lack of available information on spawning locations in Beaver Creek, because it makes observing salmon under water very difficult. Low water levels are essential for adequate viewing. The small size of the spawning population also makes spotting fish difficult. The average density of Chinook salmon spawning in Beaver Creek above the weir operated by BLM was just 1.8 fish per river mile, based on escapement estimates reported by Collin and Kostohrys (1998) and Collin et al. (2002). In the six spawning surveys attempted between 1954 and 1982, signs of spawning activity were observed just two times (Barton 1984).

2.1.9. Special Status Wildlife

2.1.9.1. Indicator

See section 2.1.10.1, Special Status Plants, for discussion of Special Status Species indicators.

2.1.9.2. Current Condition

There are no species listed (or proposed candidates for listing) as Threatened or Endangered occurring in the planning area. Therefore, this section will consider those wildlife species designated by BLM-Alaska as "sensitive." The BLM-Alaska sensitive species list is currently

being reviewed and updated (spring and summer 2009). Thus, the list of sensitive species may change from those discussed below before preparation of the Draft RMP and EIS.

The Alaska Natural Heritage Program (AKNHP) provided information on the occurrence and distribution/ranges of sensitive species within the planning area. Five sensitive bird species are found within the planning area but do not have significant range on BLM-managed lands and are unlikely to occur there. The red-throated loon and surf scoter occur within the planning area in low wetlands of the Yukon Flats and upper Tanana River near Tetlin NWR. Similarly, the AKNHP-identified ranges of black scoters and long-tailed ducks (which are identical and are in the Yukon Flats and Tanana-Kuskokwim waterfowl production units) intersect BLM lands only in a couple small areas adjacent to Yukon Flats and Tanana River wetlands. There are only scattered records for the buff-breasted sandpiper within the planning area, none on BLM-managed lands. Although these five species should be considered as possibly present when considering site-specific management activities in or near wetlands, no RMP decisions are expected to be made in relation to these species. Eight sensitive species (seven birds and one mammal) are known to consistently occur on BLM-managed lands in the planning area.

Red-throated loon (*Gavia stellata*) breeds in low numbers within the planning area. It breeds in coastal and near coastal areas throughout Alaska, including Alaska Peninsula and all Aleutian Islands. Generally much more numerous in Alaskan tundra than in boreal forest; least numerous in Interior Alaska (Groves et al. 1996 in Barr et al. 2000). According to Barr et al. (2000) red-throated loons prefer tundra and coastal habitats but may be found in the mountains up to 1,000 meters and in some forested regions. Winter habitat generally consists of coastal waters south of the breeding areas although, they occasionally winter on inland lakes and rivers near the coast. The primary red-throated loon wintering range is along both coasts of the Aleutian Islands and south along the Pacific coast to northern Baja California (Barr et al. 2000). Red-throated loons declined by 53% from 1977 to 1993 in Alaska. Most of the decline appears to be in western tundra; no decline was documented on North Slope or boreal forest (Groves et al. 1996, McCaffery 1998). Possible mortality factors in Alaska include subsistence hunting and entanglement in fishing nets. Mammalian and avian predation is a common cause of mortality of eggs and chicks. Egg predation by arctic foxes may be high in years with low rodent populations. Competition with larger loon species for nesting sites may also be a factor (Barr et al. 2000). The red-throated loon is represented in the AKNHP database by a single location "in the middle of Yukon Flats" and by two collected specimens listed in the Arctos (UAF) database from Tetlin Lake and Fort Yukon. It is likely to be found very rarely, if at all, on BLM lands in the planning area. It is listed as uncommon in Yukon Flats NWR bird list and only one bird was detected in Yukon-Charley NP&P bird surveys (Swanson and Nigro 2003).

Long-tailed duck (*Clangula hyemalis*, and previously known as oldsquaw) is circumpolar in distribution (Johnsen and Herter 1989). In Alaska, breeding occurs mostly on the Alaska Peninsula, Yukon-Kuskokwim (Y-K) Delta, Seward Peninsula, and Beaufort Sea Coastal Plain; also includes inland areas at head of Cook's Inlet, portions of Yukon, Kuskokwim, and Tanana River valleys and Yukon and Minto Flats (Robertson and Savard 2002). AKNHP mapped distribution in the planning area is equivalent to the Yukon Flats and Tanana-Kuskokwim waterfowl production units (the mapped range is identical to that for black scoter and only a little BLM-managed land occurs at the margin of this range). In Alaska, deep *Arctophila* dominated ponds are used early in the season. During breeding, shallow ponds and braided streams are used (Robertson and Savard 2002). After breeding, most adults and fledglings move to coastal ponds and lagoons, or protected marine waters to molt. According to Hodges et al. (1996) the breeding population in Alaska has declined 75% since 1977 and continues to decline (Conant et al. 1999).

Factors contributing to the decline may include subsistence harvest and ingestion of lead shot. Twenty percent of females nesting on the Y-K Delta were exposed to ingested lead (Robertson and Savard 2002). There is documented decline in Oldsquaw numbers in waterfowl production units surveyed by the FWS in Alaska, particularly in the tundra habitat zone of western Alaska (Kotzebue Sound, Seward Peninsula, Y-K Delta, and Bristol Bay) (Conant and Groves 1998).

Black scoter (*Melanitta nigra*): Audobon Watchlist Abundant in coastal tundra of western Alaska, the black scoter is less abundant in Interior Alaska. It is reported from Denali National Park, Lake Louise, and Yukon Flats (Palmer 1976 in Bordage and Savard 1995). Breeding concentrations in the planning area occur within Yukon Flats NWR. The general breeding range of the black scoter is designated as the extent of the Yukon Flats and Tanana-Kuskokwim waterfowl production units (AKNHP, pers comm), which include very little BLM-managed lands. In Quebec, black scoters preferred small, shallow lakes for breeding; on Y-K Delta they used slough and riverbanks for nesting (Bordage and Savard 1995). The FWS North American Waterfowl Breeding Population Survey does not distinguish between members of the genus *Melanitta*, but indicates members of the scoter group have been in a slow steady decline since 1957 (Hodges et al. 1996). In a review of data from 1977 to 1997, the FWS noted that the slow decline was most dominant in the component of scoters observed in the waterfowl production units composed of tundra habitat (Bristol Bay, Yukon Delta, Seward Peninsula, and Kotzebue Sound) (Conant and Groves 1997). This decline is due to a combination of factors including lead shot poisoning, contaminants in the food chain, and hunting. The ten-year average harvest of black scoter on the Y-K Delta is 6,100 compared to the most harvested species northern pintail at 9,600 and mallard 6,800. Northern pintails and mallards have populations in Alaska of 946,000 and 836,100, while black scoter may number as low as 100,000 to 300,000 (Goudie et al. 1994, Bordage and Savard 1995, and Conant and Groves 1998). Considering that black scoter harvest on the Y-K Delta is only slightly lower than harvest of northern pintails and mallards, species with nearly three times larger populations, a greater percentage of mortality in the black scoter population in Alaska can be attributed to hunting than in these other species.

Within the planning area, the **Surf scoter** (*Melanitta perspicillata*) breeds in Yukon Flats and Tetlin NWRs (Savard et al. 1998). Adjacent wetland areas are very limited on BLM-managed lands. These confirmed breeding areas may not represent the full extent of breeding distribution due to limited studies, difficulty in distinguishing between female surf and white-wing scoters when surveying, and the secretive breeding behavior of the species. Surf scoters have been documented on the Fortymile River in July (R. Gronquist, BLM biologist, pers comm). Where studied in Canada, breeding occurs mostly on shallow lakes (Savard et al. 1998). Non-breeders and immatures summer along marine coasts in littoral areas, bays, and estuaries. Aerial surveys in Alaska from 1957 to 1992 indicate long-term decline in breeding populations (Henny et al. 1995). Caution is required for interpreting trend data because surveys are not well adapted for estimating scoter numbers (Savard et al. 1998). On average, hunters killed 18,000 scoters annually in the U.S. from 1961-1993. Eighty percent of this harvest occurred in the Atlantic Flyway. These surveys are conservative, actual harvest may be substantially higher. Large die-offs of all three scoter species occurred in 1990, 1991 and 1992 in southeast Alaska. Cause of death is unknown but many had elevated renal concentrations of cadmium (Henny et al. 1995).

Buff-breasted Sandpiper (*Tryngites subruficollis*) breeds on the eastern North Slope of Alaska and migrates south through Interior Alaska and Canada to wintering grounds in South America (Lanctot and Laredo 1994). It has been recorded only rarely in the planning area; all occurrences were likely migratory birds. This shorebird prefers dry ground on tundra ridges during breeding season. Threats to the species range-wide include disturbance at nest sites,

predation, contaminants, and loss or degradation of habitat along migration routes and in winter range (Lanctot and Laredo 1994).

Trumpeter swan (*Cygnus buccinator*) is a BLM sensitive species. Because of the remote nature of their preferred habitat in Alaska, trumpeter swans have been relatively unaffected by human development in Alaska and during a 1990 census were found to number over 13,000 statewide. Trumpeter swans breed widely throughout central and southern Alaska south of the Brooks Range and east of the Y-K delta (Mitchell 1994). Trumpeter swans are normally found in forested areas (Hansen et al. 1971). Breeding swans prefer secluded wetland areas containing extensive areas of shallow lakes with abundant emergent vegetation. They typically construct conical nests in marshy areas in 2-3 feet of water. Adjacent waters and marshes are important for foraging. They nest on a variety of freshwater marshes, ponds, lakes, and occasionally rivers. In the post-breeding period, when cygnets are able to fly, trumpeter swans congregate at staging areas in preparation for flying southward. These staging areas are usually large shallow lakes and represent important trumpeter swan habitat. Trumpeter swan pairs have been observed nesting on sloughs of Beaver Creek in the White Mountains NRA and Birch Creek in the Steese NCA, as well as wetlands between Central, Alaska and the Yukon River.

Harlequin duck (*Histrionicus histrionicus*). According to Robertson and Goudie (1999), "This sea duck occupies a niche that is unique among North American waterfowl—it uses clear, fast-flowing rivers and streams for breeding and is able to move swiftly and with great agility in turbulent white water, diving to the river bottom to pick larval insects from rocky substrates." Harlequin ducks have been recorded over most of Alaska except the Arctic coast (Johnsen and Herter 1989). Presence of harlequins in summer should not be interpreted as proof of local nesting, because a substantial portion of the population does not breed each year. Flocks of post-breeding males and immature harlequins, less than 2 years old, begin to form in late June and remain together to molt through August (ADF&G 1994). Wintering populations in eastern North America are currently much smaller than historical (late 1800s) levels. Currently, several populations in the eastern U.S. and Canada appear to be increasing or stable (Robertson and Goudie 1999). Studies done after the Exxon Valdez oil spill concluded that the number of harlequin ducks inhabiting western Prince William Sound decreased as a result of the spill in 1989 (Rosenberg and Petrula 1998). Because of their range and habitat preferences for more remote and harsh environments, harlequin duck populations and their preferred habitat here in Alaska have been relatively unaffected by human disturbances and encroaching developments. However, they can be affected by degradation of water quality and encroachment of human development in breeding streams. (ADF&G 1994). The numbers of harlequin duck in the planning area is unknown, but apparently low. Individuals have been observed on the main stem of Beaver Creek National Wild River. Harlequins were observed in the course of breeding bird surveys in Yukon-Charley NP&P (Swanson and Nigro 2003).

American peregrine falcon (*Falco peregrinus anatum*) can be found in low numbers throughout the planning area, nesting in areas with suitable habitat and migrating throughout the region. 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. The peregrine falcon suffered marked population declines due largely to use of organochlorine pesticides, including DDT (Cade et al. 1988), and was listed as endangered in 1970. The American peregrine falcon was delisted in 1999 but remains a BLM-sensitive species. Monitoring of American peregrine falcon in the U.S. and Canada indicates that populations have increased or remained stable since delisting (Rowell et al. 2003, Green et al. 2006).

Within the planning area, peregrines are most abundant along river bluffs in the Fortymile and Birch Creek wild river corridors. In the Birch Creek drainage (Clum's Fork and below to the Steese Highway) there have been approximately 25 nest sites documented, with roughly 75% occupied in a year (Ritchie and Shook 2003). Along 117 miles of the Fortymile River, Shook and Ritchie (2007) counted 30 pairs and 6 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.

Gray-cheeked thrush (*Catharus minimus*) breeds only in the far north and is a common breeder throughout the planning area. In Alaska, they favor habitats with a closed canopy of mid-sized shrubs with a dense woody undergrowth of dwarf shrubs. Suitable habitat occurs in a wide variety of habitats including riparian alder and willow thickets, open woodlands, scattered spruce forests near timberline, edge of coastal tundra, alder patches in tundra, and coastal hillsides (Lowther et al. 2001). This species is generally not found in habitats with shrubs less than 1.1 meters in height. They tolerate some forest canopy if sufficient shrub cover exists. Little information is available on population status or trend. There are not enough breeding bird survey routes within its subarctic breeding range to determine trend. The species was commonly detected in breeding bird surveys in Yukon-Charley NP&P (Swanson and Nigro 2003) and on routes adjacent to the Steese NCA and White Mountains NRA (R. Gronquist BLM biologist, pers comm 2008). The species may be vulnerable to habitat loss in its South American forest understory habitats. Alaska makes up a sizeable portion of its breeding range, and its restricted northern breeding range makes monitoring in Alaska important.

Olive-sided flycatcher (*Contopus cooperi*) 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). It breeds in habitat along forest edges and openings, including burns; natural edges of bogs, marshes, and open water; semi-open forest; and harvested forest with some structure retained. Tall, prominent trees and snags, which serve as singing and foraging perches, and unobstructed air space for foraging, are common features of all nesting habitats (Altman and Sallabanks 2000). In Alaska, they are frequently associated with relatively open boreal forest (Kessel and Gibson 1978) and are often associated with openings such as meadows, muskegs, burns, and logged areas and water (i.e. streams, beaver ponds, bogs, and lakes; Altman 1997 in ADF&G 2005). North American Breeding Bird Survey (BBS) data indicate population declines since 1966 across much of North American range; Significant overall decline of -3.6% per year from 1980-2003 (Sauer et al. 2004 in ADF&G 2005). In Alaska, a population decline of -2.1% per year occurred from 1980-2003 based on data from 53 survey routes (Sauer et al. 2004 in ADF&G 2005). The Alaska population is approximately 273,600 birds or about 25% 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). One of its primary wintering habitats, mature evergreen forests in the northern and central Andes is one of the most heavily altered habitats in South America. Andean valleys are almost completely deforested and 85% or more of the montane forests have been cut (Handel et al. 1998). These factors may be exacerbated by a very low reproductive rate. In Alaska, 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 NCA and White Mountains NRA (Gronquist, BLM biologist, pers comm 2009)

Blackpoll warbler (*Dendroica striata*) Blackpoll warblers are found in Alaska in boreal forest habitats south of the Brooks Range. In Canada, they nest primarily in black spruce forest. In the Yukon and Alaska, they occur regularly, if not primarily, in spruce-alder-willow thickets in riparian areas or the transition between tundra and taiga (Hunt and Eliason 1999). Data from the North American BBS indicate this species has suffered the steepest long-term decline of any Neotropical-Nearctic migrant landbird since 1980, with populations diminished by over 50% and 90% across breeding ranges in Alaska and Canada, respectively (Sauer et al. 2004 in ADF&G 2006 Appendix A). A large proportion (30%) of the global population is estimated to breed in Alaska (Rosenberg 2004a and 2004b in ADF&G 2006 Appendix A). Within the planning area, Blackpoll warblers have been documented infrequently (R. Gronquist, BLM biologist, pers comm 2009).

In Alaska, the **Townsend's Warbler** (*Dendroica townsendi*) is found in boreal forest dominated by white spruce in central and south-central (Anchorage, Kenai Peninsula) regions (Kessel and Gibson 1978, Spindler and Kessel 1980, Matsuoka et al. 1997a in ADF&G 2005). In central Alaska, breeding density is positively associated with density and dominance of white spruce (Spindler and Kessel 1980 in ADF&G 2005).

In Alaska, Townsend's warbler range may be expanding northward or fluctuating. Townsend's warblers have been recorded as far north as Circle during Breeding Bird Surveys. These survey routes have been conducted annually near Circle, Alaska since 1992. Townsend's warblers were first detected on these surveys in 2005 and again in 2008. Townsend's warbler was first reported in east-central Alaska in 1961, and considered a common breeder by 1965 (Kessel and Springer 1966 in Wright et al. 1998). Wright et al. (1998) summarizes BBS and Christmas Bird Count survey data as revealing generally positive trends between 1955 and 1997, but at present there is little information on population trends in Canada and Alaska. They noted that Reed (1991) ranked this warbler relatively low as a conservation priority, but indicated that habitat loss represents the major threat. Townsend's warbler is considered a species of conservation priority in Southeast Alaska by Boreal Partners in Flight (Boreal Partners in Flight 1999) because of the high percentage of the continental population breeding in an area susceptible to large-scale logging.

Canada Lynx (*Lynx canadensis*) are the only indigenous wild cat of Alaska. Once found throughout northern North America, lynx were federally listed in 2003 as a threatened species in the northern Rocky Mountains of the lower 48 states due to overharvesting and their inability to successfully compete with more opportunistic predators; consequently, BLM in Alaska considers the Canada lynx a sensitive species. In Alaska, Canada lynx are 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 best lynx habitat in Alaska occurs where fires or other factors create and maintain a mixture of vegetation types with an abundance of early successional growth. This provides the best habitat for snowshoe hares and other small prey of lynx. The primary prey of lynx in most areas is the snowshoe hare, which undergoes an 8-11 year cycle of abundance. Other small prey such as grouse, ptarmigan, squirrels, and microtine rodents are regularly taken. When hares are scarce, lynx use these other food sources more extensively. (ADF&G, 1994)

2.1.9.3. Trends

Trends of most sensitive species in the planning area are unknown. Alaska trends are discussed in the "current condition" section. Peregrine falcons have been generally increasing in range and abundance over the past 20 years within the planning area, as the population recovers from the

effects of pesticides. Monitoring of American peregrine falcon occupancy and productivity has been conducted in the Fortymile National 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 since 2000 (where irregular territories are those used 20-80% of years monitored) 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,BLM biologist, pers comm).

Lynx are abundant in the planning area and populations follow snowshoe hare cycles. In units 25C, 20E and 25B, harvest is believed to have limited effect on lynx population trends, and trapping season length is fixed at November 1 - February 28 with no bag limit. (In units with greater harvest pressure, season length is adjusted based on indices of populations status from harvest data). Total reported harvest in the nine year period (1997-98 through 2005-06 regulatory years) averaged 170 lynx annually in Unit 25B, 13 in 25C, and 63 in 20E. Reported harvest in 1997-98 and 1998-99 regulatory years in 25B were 429 and 434 lynx respectively, while in 2002-03 and 2003-04 harvest bottomed out at 13 and 38 lynx, illustrating the dramatic population fluctuations in this species (ADF&G 2007).

Habitat for sensitive species has remained largely intact and most sensitive species are so listed due to overall or regional population declines or concerns about habitat changes or impacts occurring outside the planning area.

2.1.9.4. Forecast

We are unable to predict the future trend for most sensitive species. See individual species accounts for discussions of potential threats which could impact future population levels. Peregrine falcons may be approaching population levels at which most suitable nest sites are occupied and further population growth may be limited.

2.1.9.5. Key Features

Certain habitats may be important for multiple sensitive species. Wetlands (lakes, ponds, rivers/streams, and associated shorelines) can potentially support several sensitive species and should be given special consideration in planning. Lakes and ponds are generally not abundant on BLM-managed land in the planning area, which may increase their importance where they do occur. Cliff and bluff habitats, especially near water, are likely to harbor nesting peregrine falcons, are readily identified, and should be given special consideration. Maintenance of water quality in swift-flowing streams may be important for harlequin duck and also provides benefits to aquatic species, including invertebrates and fisheries. Tall shrub habitats (including riparian shrubs) are not generally abundant in the planning area, but provide habitat for gray-cheeked thrush, blackpoll warbler, and other birds. Mature white spruce forest is important habitat for Townsend's warbler.

2.1.10. Special Status Plants

2.1.10.1. Current Condition

The objectives of special status species management on public lands are to conserve listed species and the ecosystems on which they depend; and to ensure that actions requiring authorization or approval by the BLM are consistent with the conservation needs of special status species and

do not contribute to the need to list any special status species, either under provisions of the Endangered Species Act (ESA) or other authority. "Special status species" are defined as those species listed as threatened or endangered under the provisions of the ESA; species that have been proposed for listing as threatened or endangered under the ESA; species designated as candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (FWS) and/or National Marine Fisheries Service (NMFS); species listed by the State of Alaska in a category implying but not limited to potential endangerment or extinction; and BLM designated sensitive species.

There are no species listed (or proposed or candidates for listing) as Threatened or Endangered which occur in the planning area (Memo from FWS Fairbanks Field Office to BLM, June, 2008). Therefore, this section will consider only those species designated by BLM-Alaska as "sensitive." Alaska BLM Sensitive fish species and sensitive wildlife species are discussed under sections 2.1.9 and 2.1.10.

BLM gives special consideration to certain species that are considered sensitive, in cooperation with the State agency responsible for managing those species. The BLM-Alaska Sensitive Species List was last updated April 30, 2004. It will be reviewed and possibly updated in 2009. The planning area includes land on which sensitive species are known or suspected of occurring. The sensitive species designation is normally used for species that occur on BLM-managed lands and for which BLM has the capability to significantly affect the conservation status of the species through management. They are those species that: (1) could become endangered in or extirpated from the State, or within a significant portion of its distribution; (2) are under status review by the FWS or NMFS; (3) are undergoing significant current or predicted downward trends in habitat or populations such that Federal or State listed status may become necessary; (5) typically have small and widely dispersed populations; (6) inhabit ecological refugia or other specialized or unique habitats; or (7) are State listed but may be better conserved through application of BLM sensitive species status. Delisted species are managed as BLM sensitive for 5 years after listing.

BLM-Alaska has relied on 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/Sensitive species lists for Alaskan plants, birds, mammals and fish. A brief overview of the global and state ranking criteria is given below (Lipkin and Murray 1997).

Table 2.11. Alaska Natural Heritage Program, Global and State Ranking Criteria (Lipkin and Murray 1997).

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.

Global Rank	**State Rank**
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.
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.

The BLM-Alaska Special Status Species (SSS) list includes 32 sensitive plant species found within Alaska, all of which are either ranked S1 or S2 by the AKNHP. Many species on this list do not occur within the Eastern Interior planning area. There are eight BLM-Alaska sensitive plant species which have been documented in the planning area and may occur on BLM lands (Table 2.12). Two of these have been documented to occur on BLM managed lands through on the ground inventory (*Physaria calderi* and *Erysimum asperum* var. *angustatum*)

Table 2.12. Special Status Plant Species known to occur within the Eastern Interior planning area, with Alaska Natural Heritage Program status rankings.

SCIENTIFIC NAME	**COMMON NAME**	**AKNHP RANKING** ***GLOBAL***	***STATE***
Claytonia ogilviensis	Ogilvie Mountains spring beauty	G1	SP
Cryptantha shackletteana	Shacklettes' Catseye	G1Q	S1
Draba murrayi	Murray's Whitlow-grass	G2	S2

SCIENTIFIC NAME	COMMON NAME	AKNHP RANKING *GLOBAL STATE*	
Draba ogilviensis	Ogilvie Mountains whitlow grass	G2	S2
Eriogonum flavum var. *aquilinum*	Yukon Wild-buckwheat	G5T2	S2
Erysimum asperum var. *angustatum*	Narrow-leaved prairie rocket	G5T2	S1S2
Physaria calderi	Calder's Bladder-pod	G3G4	S2
Podistera yukonensis	Yukon Podistera	G2	S1

Sensitive Plants known to Occur in the Planning Area

Narrow-leaved prairie rocket

Erysimum asperum (Nutt.) DC. var. *angustatum* (Rydb.) Boivin

= *E. angustatum* Rydb.

= *E. capitatum* (Douglas ex Hook.) Greene var. purshi (Durand) Rollins

Family: Brassicaceae (Mustard family)

Common name: narrow-leaved prairie rocket

AKNHP Ranking: G5T2 S1S2

An East Beringian endemic, *Erysimum asperum* var. *angustatum* is narrowly restricted to east central Alaska and southern Yukon. *Erysimum asperum* var. *angustatum* was first collected and described under the name *E. angustatum* from Dawson, Yukon (Rydberg 1901). Since then the species has been documented from additional Dawson area sites, from Burwash Creek in southwestern Yukon, 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. Two specimens at the UAF Herbarium labeled from the Porcupine River are suspect 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 (R. Lipkin, pers. comm.). Taxonomic treatments have contributed considerable confusion since the species was first described in 1901. Despite this taxonomic confusion, and a potential nomenclatural change, or a splitting of the taxon within the northern flora, *E. asperum* var. *angustatum* remains a distinctive taxon (or taxa) for our area and will remain listed as rare. *Erysimum asperum* var. *angustatum* has been found growing on dry, rocky slopes, steppe bluffs, rock outcrops, and in the herbaceous, dry understory of open woodlands. 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.). It is recommended that this species remain on the BLM Sensitive Plant Species list. *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.

Calder's Bladderpod

Physaria calderi (G.Mulligan & A. Porsild) O'Kane & Al-Shehbaz

= *Lesquerella calderi* G. Mulligan & A. Porsild

= *L. arctica* (Wormsk.) S. Wats. ssp. *calderi* (G. Mulligan & A. Porsild) Hultén

Family: Brassicaceae (Mustard Family)

Common name: Calder's bladderpod

AKNHP Ranking: G3G4 S2

Physaria calderi was first collected by J.A. Calder and J.M. Gillett in the Ogilvie Mountains, Yukon, in 1960 and published as *Lesquerella calderi* by G. Mulligan and A. Porsild (1969). The North American representatives of *Lesquerella* have recently been placed within the genus *Physaria* based on molecular, morphological, and distributional data (Al-Shehbaz & O'Kane 2002). More recent locations where *P. calderi* has been documented include additional sites in the Yukon Ogilvie Mountains, the Richardson Mountains in northern Yukon, and the Ogilvie Mountains and Keele Range in Alaska. An East Beringian endemic, it is narrowly restricted to east central Alaska and northern Yukon. *Physaria calderi* is closely related to *Physaria (Lesquerella) arctica*, a wide spread plant found in northern North America, Greenland, and Russia. Both species have bright yellow flowers, globose fruits, a basal rosette of silver-gray pubescent leaves, and both are found in similar habitats. Although both species have been found in the Ogilvie Mountains of Alaska and northeastern Yukon, it is rare that they overlap at a single site. *Physaria calderi* has been collected from open, dry habitats such as screes, rock outcrops, rocky ridge tops, floodplains, dunes, fellfields, and open woodlands. Based on 2007 BLM-sponsored collections from the Keele Range, combined with additional collections made in the Yukon, 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 land, therefore we recommend *Physaria calderi* remain on the BLM Sensitive Plant Species list. *Physaria caldera* was collected at three sites in upper Fort Creek (a tributary of the Salmon Fork Black River) in 2007 and near VABM Storm, also in the Salmon Fork headwaters, in 1991.

Sensitive plants occurring or likely to occur in the Eastern Interior planning area, but which have not been documented to occur on BLM lands

Ogilvie Mountains spring beauty

Claytonia ogilviensis McNeill

Family: Portulacaceae (Spring Beauty Family)

Common name: Ogilvie Mountains spring beauty

AKNHP Ranking: G1 SP

Claytonia ogilviensis was first described in 1972 from the Ogilvie Mountains, Yukon, just 3 km east of the Alaska border (McNeill 1972). Since this first record, only two additional Yukon locations have been documented; a small population has been found in the Ogilvie Mountains at Windy Pass, on the Dempster Highway, and in the Cathedral Creek headwaters, less than 1 km east of the Alaska border. It is ranked SP (potential to be in the state) Alaska, as the proximity of two of the three known populations suggests a high probability of its occurrence in Alaska. *C. ogilviensis* is a very narrowly restricted Ogilvie Mountains endemic with only a few plants being seen at each of the known localities. It was watched for, but not found, during both the 2007 Keele Range and 2008 Little Black River BLM inventories. The limestone ridges that transect the Alaska-Yukon border in the Ogilvie Mountains have been inventoried, but the species was not found (Parker 1997, Cook et al. (1993). If located in Alaska, its ranking would become G1 S1. We recommend *C. ogilviensis* remain on the BLM Sensitive Species list to alert field workers in the vicinity of its known range to continue to watch for it and because it could potentially be found in in the Eastern Interior Planning area.

Shacklette's cryptantha

Cryptantha shackletteana Higgins

Family: Boraginaceae (Borge Family)

Common name: Shacklette's cryptantha

AKNHP Ranking: G1Q S1

Cryptantha shackletteana was first collected in 1960 by geologist H.T. Shacklette at Eagle (Mission) Bluff on the Yukon River, Alaska, and the species was described later by Higgins (1969). Since this first location record the only additional sites where *C. shackletteana* has been documented are Calico Bluff, 20 km downriver from Eagle Bluff, and from Totschunda Creek in the central Mentasta Mountains, NW of the Nabesna River. *Cryptantha shackletteana* has been found growing on calcareous gravel barrens and slopes in the Mentasta Mountains, and on non-calcareous rubble slopes, fine screes, and outcrops at Eagle Bluff and Calico Bluff. Of the three localities currently documented, two are relatively accessible (Eagle Bluff, by road, and Calico Bluff, by river) and situated on lands which lack protective management policies. Hence, its state ranking at S1 will probably be maintained unless several more localities are documented. If future taxonomic treatments subsume it as synonymous with, or a variety of, *C. spiculifera*, the global ranking will be modified, but the state ranking should stay unchanged. We recommend that

C. shackletteana remain on the BLM Sensitive Species list as it could potentially be found in the planning area, and 2 populations lack protective land management policies.

Murray's whitlow-grass

Draba murrayii G.A. Mulligan

Family: Brassicaceae (Mustard Family)

Common name: Murray's whitlow-grass

AKNHP Ranking: G2 S2

Draba murrayii was first described based on two specimens collected at Kathul Mountain on the Yukon River, Alaska (Mulligan 1979). Since this discovery, it has been found at several sites along the Yukon River and in the lower reaches of its major tributaries from Eagle (Mission) Bluff to 30 km upstream of Circle City. It has also been found in the Ogilvie Mountains within Alaska (Parker 1995, 1997). Only a single collection is known from the Ogilvie Mountains within the Yukon (Cody 1996, B. Bennett, pers. comm.). It is a narrowly restricted east central Alaska-Yukon endemic. More thorough descriptions of both the locations, habitats and natural history of *D. murrayii* can be found in Batten et al. (1979) and Parker (1995). *Draba murrayii* was first collected from soil patches associated with steep, southeast-facing outcrops on Kathul Mountain. However, later collections come from a broad diversity of habitats including the understory of open, deciduous and mixed forest, unstable talus, dry, south-facing steppe bluffs, open burns, and north-facing outcrops. *D. murrayii* was usually associated with rocky, and/or bare soil microhabitats regardless of the habitat in which it is found. It has been found on both calcareous and non-calcareous substrates. *Draba murrayii* was watched for, but not located, during both the 2007 Keele Range and 2008 Black River BLM inventories. Although many of the locations support large populations, its ranking of G2 S2 reflects its narrowly restricted geographical range. As most of the known populations are within Yukon-Charley Rivers National Preserve, this species may not be as high a priority for inclusion on the BLM Sensitive Plant Species list as others which are recommended for listing.

Ogilvie Mountains whitlow-grass

Draba ogilviensis Hultén

Family: Brassicaceae (Mustard Family)

Common name: Ogilvie Mountains whitlow-grass

AKNHP Ranking: G2 S2

Draba ogilviensis was first described by Eric Hultén from collections he made in the southern Ogilvie Mountains, Yukon (Hultén 1966). The species is now documented from several additional Ogilvie Mountains locations and from the vicinity of Kluane Lake in Yukon. In Alaska, it has been found in the vicinity of Mt. Casca in the western Ogilvie Mountains. Cody (1996) notes an occurrence in the Mackenzie Mountains, Northwest Territories (NWT). With the exception of the Kluane Lake and NWT populations, *Draba ogilviensis* is endemic to the Ogilvie Mountains. *Draba ogilviensis* has been found growing in moist alpine meadows, wet seeps and screes, and in the moist, mossy understory of shrubs in the subalpine. Most known localities are on limestone, as

this is the dominant bedrock in the Ogilvie Mountains. However, it is uncertain if it is an obligate calciphyte. This species was searched for, but not located, in the Keele Range (2007) inventory in the alpine moist-mesic meadows found at the headwaters of several small drainages. The current ranking for *D. ogilviensis*, G2 S2, reflects its very restricted range and limited documented localities. As it is known from only a single Alaskan locality, within Yukon-Charley National Preserve, it is recommend the species remain on the BLM Sensitive Plant Species list.

Yukon wild-buckwheat

Eriogonum flavum Nutt. var. *aquilinum* J. Reveal

Family: Polygonaceae (Buckwheat Family)

Common name: Yukon wild-buckwheat

AKNHP Ranking: G5T2 S2

Eriogonum flavum var. *aquilinum* was first collected in 1960 on Eagle (Mission) Bluff by H.T. Shacklette. The species has since been documented from additional Alaskan sites along the Yukon River at Kathul Mountain, Calico Bluff, Webber Creek bluff and Woodchopper Creek bluff. It is also known from a large bluff system along the central Porcupine River valley. In Yukon, it is known only from the vicinity of Aishihik and Sekulmun lakes (B. Bennett, pers. comm.). The species is endemic to east central Alaska and southwestern Yukon. *Eriogonum flavum* var. *aquilinum* grows on xeric steppe (graminoid) bluffs, rock outcrops, and rubble slopes. Due to the limited number of known localities and the restricted habitat, *E. flavum* var. *aquilinum* will probably remain ranked as S2 unless several additional populations are found. Most of the populations in Alaska are located within Yukon-Charley Rivers National Preserve or the Arctic NWR, hence exist under protective land management policies. It has not yet been located on BLM-managed land. This species may not be as high a priority for inclusion on the BLM Sensitive Plant Species list as others.

Yukon podistera

Podistera yukonensis Mathias & Constance

Family: Apiaceae (Umbel Family, Parsley Family)

Common name: Yukon podistera

AKNHP Rankings: G2 S1

Podistera yukonensis was described from plants collected in 1948 growing on alpine talus above the Little Klondike River, near Dawson, Yukon (Mathias and Constance 1950). Additional Yukon localities now documented include the Moosehide Hills, the Tombstone Range, the Dawson Range, and in the vicinity of Carmacks which is the southern margin of its range (B. Bennett, pers. comm.). In Alaska, the species is known from Kathul Mountain on the Yukon River, and from two sites in the Ogilvie Mountains, Hillard Peak (just north of the Yukon River) and north of Jones Ridge. *Podistera yukonensis* is a narrowly restricted endemic known only from east central Alaska and southwestern Yukon. It grows on dry rocky screes and rubble slopes at mid elevations and in the alpine at the three known Alaska localities. In Yukon it has been found in similar habitats in addition to xeric steppe (graminoid) slopes, sandy blowouts, and in the open, dry

understory of an aspen-white spruce forest. Due to the very few known populations, the species will probably stay at its current ranking, G2 S1, until 3 or more new locations are found. For the same reason, it is recommended that *P. yukonensis* remain on the BLM Sensitive Plant Species list.

2.1.10.2. Indicator

The Alaska Statewide Land Health Standards includes the following goals, objectives, and guidelines.

Goal: To ensure that habitats support healthy, productive, and diverse populations and communities of native plants and animals (including special status species and species of local importance, e.g., those used for subsistence).

Objective: Essential habitat elements for species, populations, and communities are present and available to the extent they are consistent with the potential/capability of the landscape.

Guideline: Where practical, use will be redirected, as necessary, to protect Federal and State listed and candidate Threatened and Endangered species habitat, to enhance indigenous animal population, and to otherwise maintain public land health through avoidance of sensitive habitat.

Guideline: Fish and wildlife resources and habitat will be managed to ensure compliance with the Endangered Species Act (ESA) and to ensure progress towards recovery of listed threatened or endangered species.

Indicators for special status species as a whole have not been established for Alaska or the planning area. Indicators for individual special status species in the planning area have also not been established. Potential indicators for special status species (SSS) might include the following.

Eastern Interior Planning area-wide SSS indicators:

- The number of SSS which require listing as threatened or endangered under the ESA.
- The number of SSS which are removed from special status due to increasing population trend.

Individual SSS indicators (these could be combined for an overall program indicator)

- Population trend of individual special status species.
- Percent of surface disturbance in special status species range or habitat.
- AKHNP/Natureserve S-Rank remaining stable or improving.

With few exceptions, quantitative information which would allow detection of a population trend is not available for most sensitive species. By their nature, they are typically uncommon and difficult to census. In some cases, such as sensitive plants, efforts have focused on detecting whether species occur on BLM-managed lands and have not progressed to estimating population sizes or trends.

2.1.10.3. Trends

Trends for these special status plant species are unknown. Most occur in habitats which are presently undisturbed.

2.1.10.4. Forecast

It is not possible to predict future status for these special status plant species. Most occur in habitats which are not expected to be the site of surface-disturbing activities.

2.1.10.5. Key Features

Steep south facing bluffs and slopes provide habitat for several sensitive plant species known to occur in the planning area.

2.1.11. Wildland Fire Ecology and Management

Introduction

Fire Management is the management of fire, fuels and the prevention of human caused fires on public land managed by the Bureau of Land Management (BLM). Fire Management is made up of three major components; Wildland Fire, Fuels Management and Prevention. Fire Management is found in Departmental Manual, Part 620 and BLM Manual section 9200. Fire is an important mechanism of change in the planning area. The vegetation has evolved with the occurrence of periodic fire events. The RMP will describe existing conditions, desired future conditions and lay out the goals and objectives to achieve those future conditions. Management strategies will be developed for each of the three components of Fire Management to meet those goals and objectives.

Wildland Fire Management is the management wildland fire in such a manner that fire is allowed to play it's key role in the ecosystem, while protecting identified values at risk. Fuels management is the development and implementation of prescribed fire, mechanical or chemical treatments to fuels in a given area(s). Fuels Management projects will be designed to meet desired future conditions in areas where fire is being suppressed or acreage minimized due to values at risk. Fuels projects can be used to protect site specific values at risk or be large landscape scale projects designed to benefit multiple resources. Prevention is the reduction and elimination of human caused fires.

Department of Interior (DOI) goals are found in U.S. Department of Interior Strategic Plan 2003-2008. Several of the goals directly relate to Fire Management: Improve health of watersheds, landscapes and marine resources that are DOI managed or influenced in a manner consistent with obligations regarding the allocation and use of water; sustain biological communities on DOI managed and influenced lands and water in a manner consistent with obligations regarding the allocation and use of water; protect lives resources and property. The way to achieve these goals is to use wildland fire and fuels projects to restore and maintain fire adapted ecosystems and to reduce hazardous fuels while protecting human life, cultural resources and other identified values at risk.

BLM goals are found in Bureau of Land Management Strategic Plan, 2000-2005. The goals that relate to Fire Management are: Preserve natural and cultural resources; reduce threats to public health, safety and property; and restore at risk resources and maintain functioning systems. The way to achieve these goals is also to use wildland fire and fuels projects to restore and maintain fire adapted ecosystems and to reduce hazardous fuels while protecting human life, cultural resources and other identified values at risk.

National Fire Management goals are found in Federal Wildland Fire Management Policy and Program Review, December 1995 and Review and Update of the 1995 Wildland Fire Management Policy, January 2001. There are many Fire Management goals found in these two documents. Among the most important are: protect human life and identified property; use wildland fire and fuels treatments to meet resource objectives; reduce the risk and cost of uncontrolled wildland fires through wildland fire and fuels treatments; and reduce the adverse effects of fire management activities and continue interagency cooperation and collaboration.

BLM Alaska goals are found in Bureau of Land Management-Alaska Statewide Land Health Standards. Because fire is such an important process to systems, the uses of wildland fire and fuels treatments are key in meeting most of the goals stated in the statewide land health standards.

There are numerous other documents that plan or lay out strategies for fire. These are discussed in the following section. They do not change the above stated goals, but reiterate, clarify and give guidance on how to accomplish them.

Current Planning Documents and Management Practices

There are three fire management plans that cover the planning area representing three of the original thirteen geographic area based fire planning documents for the state of Alaska. They are: Alaska Interagency Fire Management Plan, Fortymile Planning Area 1984; Alaska Interagency Fire Management Plan, Upper Yukon Tanana Planning Area 1984 and Alaska Interagency Fire Management Plan, Copper Basin Planning Area 1983. A fourth plan, the Alaska Interagency Fire Management Plan, Tanana/Minchumina Planning Area 1982 and Amendment 1984, while it does not cover any land in the planning area, contains the environmental assessment for all of the thirteen original plans. In 1998 the thirteen original plans were consolidated into one document, the Alaska Interagency Wildland Fire Management Plan 1998 (AIWFMP). This consolidation updated language, eliminated the boundaries of the thirteen original plans and combined common elements into a single operational document. Area specific documentation still resides in the original planning documents. Lands within the planning area are currently managed consistent with these four plans.

BLM Alaska has a cabin/structure protection policy that outlines protection priorities. The policy states its number one priority as safety of the public and fire suppression personnel. The policy then goes on to delineate criteria for protection. It can be found in Appendix C.

Prior to fire planning, policy directed all fires to be suppressed in Alaska. The thirteen original fire plans and the AIWFMP recognized that this policy was costly, of questionable effectiveness, and had a negative effect on the diversity and productivity of the fire-dependent ecosystems of Alaska. In addition, during periods of high fire activity it was not possible to provide immediate and effective suppression on many fires because of the shortage of personnel, equipment, supplies or aircraft. It was determined that an improved system was needed for establishing priorities and levels of suppression. Once fire protection needs are determined, the lands are placed in Critical, Full, Modified, or Limited management option. Option selections are based on land manager/owner(s) values to be protected as well as land and resource management objectives. These management strategies described below are currently implemented in the planning area commensurate with their management options.

The fire management strategies selected vary from initial attack and sustained suppression efforts in the critical and full management areas to surveillance in the limited management areas.

This categorization and ensuing prioritization ensures that: (1) human life, private property, and identified resources receive an appropriate level of protection with available firefighting resources; (2) the cost of the suppression effort is commensurate with values identified for protection; and (3) the ability of land manager/owner(s) to achieve their individual management objectives is optimized.

Management options (Critical, Full, Limited, and Modified) are reviewed yearly and adjustments are made to insure resource goals and objectives are being met. Fire Management Options and descriptions can be found in Appendix D.

Regional Context

The natural fire regime in the planning area appears to be fairly well intact. BLM has not been suppressing fires for long enough to have excluded multiple fire returns. Large portions of the planning area are in the limited management option where fires are monitored rather than suppressed. Some impacts may be occurring near villages where the critical and full management option lands are. These areas are on village and regional corporation land. BLM does manage some lands in the modified and full management options. These lands will have to be evaluated for impacts of fire exclusion.

2.1.11.1. Indicator

The best current indicator of fire management resources is fire regime and condition class (FRCC). At this time no FRCC has been completed. We are currently developing a FRCC for the planning area and anticipate this data will be available for use in developing the Draft RMP/EIS.

2.1.11.2. Current Condition

Current condition is unknown. We are currently developing a FRCC for the planning area.

2.1.11.3. Trends

There has been a trend from past to present to manage fires to meet resource objective rather than attempting to exclude fire. This has been done by changing large areas of the full and modified management options to the limited management option. This allows the BLM to meet resource objectives and contain costs.

2.1.11.4. Forecast

Because of our ability to use appropriate management response and change management options as resource needs change, areas that were once in the full or modified management options will continue to trend to a natural fire regime and condition class of a FRCC 1.

2.1.11.5. Key Features

The key feature of the planning area is a nearly intact fire regime. Because of the short time we suppressed all fires and the remoteness of the area we have a functioning fire regime. Large areas that were once in full and modified management options have had some large fire years in the past 10 years.

2.1.11.6. Resource Uses

Resource uses in fire management are fairly limited. There is some opportunity, through the fuel program, to potentially utilize some raw wood products. This would be in the form of firewood and house logs from areas of hazard fuel reduction projects.

2.1.11.7. Social and Economic Features

Social features are almost exclusively tied to smoke production of large fires and their impact on the local communities. After the 2004 and 2005 fire seasons Smoke Effects Mitigation and Public Health Protection Procedures were developed to help mitigate the effects of smoke on rural communities. The document can be found on the Alaska Fire Service web site at http://fire.ak.blm.gov/.

Economic features are also tied to smoke and its impact on local communities. Smoke impact usually manifests itself in the closing of the local airport. When airports are closed it disrupts the flow of goods and services costing the community money. Procedures to mitigate these economic impacts were incorporated into Smoke Effects Mitigation and Public Health Protection Procedures document.

2.1.12. Cultural Resources

2.1.12.1. Indicator

This section seeks to identify the factors that are used to describe the resource condition for cultural resources on federally-managed lands.

Mitigation of adverse impacts to cultural resources, including both prehistoric and historic sites, on federally-managed lands is limited to those sites ("historic properties") that are on, or eligible to be included to, the National Register of Historic Places (NRHP), a list that was established by the National Historic Preservation Act (1966, as amended) (NHPA). Historic Properties that are on or eligible to the NRHP are districts, sites, buildings, structures or objects that are deemed "significant" at a local, regional, or national level. The key phrase "or eligible to be included to" is taken to mean all those districts, sites, etc. (i.e., properties) that have not yet been through the official eligibility process. Thus, Federal protection applies not only to those sites that are actually on the NRHP, but also to those that have not yet been through the official Section 106 process (per NHPA 1966, as amended). Only sites that have been through the official eligibility process, and have been determined not eligible to the NRHP, are no longer protected under the Section 106 process. This is not to say, however, that Federal land managers may not be interested in sites that have been determined ineligible to the NRHP. For instance, land managers may protect and use cultural sites for their educational or recreational opportunities, regardless of eligibility status.

Outside of such specific circumstances, however, Federal managers are mostly concerned with only those sites that meet or could meet the qualifications to be included in the NRHP. To be included to the NRHP, any property must be determined "significant" based upon one or more of four criteria:

- Criterion A, **Event**: is it associated "with events that have made a significant contribution to the broad patterns of our history" (NPS 1991:12);

- Criterion B, **Person**: is it associated "with the lives of persons significant in our past" (NPS 1991:14);
- Criterion C, **Design/Construction**: the property embodies "the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction" (NPS 1991:17);
- Criterion D, **Information Potential**: the property has "yielded, or may be likely to yield, information important in prehistory or history" (NPS 1991:21).

Two additional criteria are available when considering if a property is eligible for inclusion as a National Historic Landmark (NHL), a status authorized under the Historic Sites Act (1935) – see 43 CFR 65.

In addition to meeting at least one of the four criteria A-D, above, a property must also have "integrity." A property either has integrity, or it does not. The NRHP recognizes seven aspects or qualities of integrity. Most properties that are eligible for inclusion to the NRHP typically need to meet or demonstrate at least several of these seven aspects. <u>These aspects of integrity ARE the factors that are used to describe the resource condition for cultural resources on federally-managed lands</u>. Aspects of integrity are often qualitative or subjective in nature, and need to be demonstrated relative to both the specific property in question and the criterion or criteria under which it is being nominated. The seven aspects of integrity, along with their definitions (NPS 1991: 44-45), are:

- *Location*: "Location is the place where the historic property was constructed or the place where the historic event occurred";
- *Design*: "Design is the combination of elements that create the form, plan, space, structure, and style of a property";
- *Setting*: "Setting is the physical environment of a historic property";
- *Materials*: "Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property";
- *Workmanship*: "Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory";
- *Feeling*: "Feeling is a property's expression of the aesthetic or historic sense of a particular period of time";
- *Association*: "Association is the direct link between an important historic event or person and a historic property."

Not all aspects of integrity are applicable to all site types or even criterion; it will be noticed, for instance, that several aspects are more applicable to standing buildings or structures, and not to buried archaeological sites.

As will be discussed in the next section, with only a few exceptions most of the known sites in the EIFO that are eligible for inclusion to the NRHP would be nominated under Criterion D, Information Potential, based upon the property's potential to yield specific data that addresses specifically-identified research questions. Therefore, a few remarks regarding the aspects of integrity relative to Criterion D are in order. Quoting from the National Park Service's National Register Bulletin No. 15, *How to Apply the National Register Criteria for Evaluation*(1991: 46), for properties that are eligible under Criterion D - including both surface and subsurface

archaeological sites as well as standing structures studied for their information potential - less attention is given to their overall condition than if they were being considered under Criteria A, B, or C. Surface and subsurface archaeological sites, in particular, do not survive today as they were when they were first formed. There are always cultural and natural processes that alter artifacts, features, and strata and their spatial relationships after original deposition.

The important point to make here is that sites being evaluated for their information yield must have adequate completeness or quality of data of the artifact assemblage and preservation of features at a site, a point made by Donald Hardesty and Barbara Little in *Assessing Site Significance: A Guide for Archaeologists and Historians* (2000: 48). This adequacy of the quality of the data present is assessed under the integrity of *materials*, one of the seven qualities outlined above. In short, an archaeological site nominated under Criterion D must have enough potential information, in enough quality, to answer specified research questions that would make the site significant at the local, regional, or national level. Again, except for those circumstances where managers choose to use cultural sites to meet other program needs (e.g., recreation; interpretation), and therefore the eligibility of a site to the NRHP is not of primary concern, these will be the key thresholds of resource condition that most sites in the EIFO will need to meet, in order to be of concern to Federal managers during their planning efforts.

Regulations found in 36 Code of Federal Regulations (CFR) 60 list the criteria, integrity, levels of significance, age, and exceptions that are used to evaluate and nominate sites to the NRHP. Regulations found in 36 CFR 63 and 36 CFR 800 outline the process for determining whether a site meets the appropriate criteria for being placed on the NRHP. A series of bulletins produced by the National Park Service (NPS) provide help and guidance for this process and for a host of specific site types. Several easy-to-read books that help with interpreting and using the National Historic Preservation Act and other Federal laws and Executive Orders that are relevant to protection and preservation of federally-managed cultural resources include Hardesty and Little (2000), Sherry Hunt et al.'s *Archaeological Resource Protection* (1992), and Thomas King's *Cultural Resource Laws and Practice: An Introductory Guide* (1998), *Federal Planning and Historic Places: The Section 106 Process* (2000), *Places that Count: Traditional Cultural Properties in Cultural Resource Management* (2003), and *Saving Places that Matter: A Citizen's Guide to the National Historic Preservation Act* (2007).

2.1.12.2. Current Condition

This section describes the location, extent, and current condition of the resource in the planning area. The analysis can occur at geographic levels as appropriate.

Location and Extent:

As of the time of this printing, there are 380 known historic and prehistoric cultural resources on BLM-managed lands inside the planning boundary of the Eastern Interior RMP. Most of these sites occur within (1) the confines of the three Wild and Scenic Rivers inside the Eastern Interior Field Office, (2) the Steese National Conservation Area (Steese NCA), (3) the White Mountains National Recreation Area (White Mountains NRA), and (4) on Federal mining claims. As a result, most of the known sites will remain under BLM management after the Alaskan land conveyance process is completed.

Table 2.13 lists the locations of these sites relative to the Fortymile, Steese-White Mountains, and Black River areas, and further divides the Upper Black River area into those limited acres west of

the Yukon River versus the bulk of the area which is east of the Yukon, in the Black River drainage proper. Table 2.13 also lists the density of sites (number of sites per million acres) in each subunit.

Table 2.13. Numbers and densities of known cultural resources in the Eastern Interior Planning Area, as of May 2008. Density figures are the number of known sites per million acres.

Subunit	Historic Sites	Prehis-toric Sites	Total Sites	Acreage (million)	Historic Site Density	Prehis-toric Site Density	Total Site Density
Fortymile	232	18	**250**	2.850	81.4	6.3	87.7
Steese-White Mountains	64	17	**81**	2.200	29.1	7.7	36.8
Black River	27	22	**49**	2.890	9.3	7.6	17.0
Black River -east	3	15	**18**	2.617	1.1	5.7	6.9
Black River -west	24	7	**31**	0.273	87.9	25.6	113.6
Total	**323**	**57**	**380**	**7.94**	**40.8**	**7.2**	**48.0**

It is apparent that the known sites in the planning area are unevenly distributed across space, relative to the three subunits (Table 2.15). The Fortymile subunit, with 250 sites, has three times and five times as many known sites as the Steese-White Mountains and Upper Black River subunits, respectively. Additionally, known site density on the landscape is much greater in the Fortymile than in the other subunits: more than twice as much as in the Steese-White Mountains and more than five times as much as the Upper Black River, even after taking into account different acreage totals in the different subunits. Another key difference apparent in Table 2.15 is that historic era sites (i.e., post-Euroamerican contact) greatly outnumber prehistoric sites, accounting for 85% of the known sites in the planning area.

Why do these disparities exist among known site numbers, densities, and age differences of the sites in the planning area? Three key reasons for these differences emerge, all of which are linked. 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 323 historic sites in the sample (Table 2.15), 88% have standing or collapsing buildings, structures, or large pieces of metal equipment present, thus making them highly visible resources. This is particularly true in the Fortymile and Steese-White Mountains subunits, where historic resources outnumber prehistoric resources 13:1 and almost 4:1, respectively. That the vast majority of these sites are less than 100 years old means that, all things being equal, most of these are not completely eroded or degraded down to the ground and are clearly visible today even to the untrained eye.

Second, two of the main occupations that drew people into the Alaskan interior during the early-mid 20th century were placer gold mining and trapping, both of which focused their domestic occupations and 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 1886 gold discovery and stampede to the area, and continuing through 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 a relatively straightforward matter.

Logistical constraints of doing field work in Interior Alaska often necessitate that BLM do work in the more accessible areas, which are not necessarily where BLM would *like* to do work. This, coupled with relatively limited BLM funding for cultural resources in Alaska, has led to a focus on areas that are relatively cheap and easy to get to; that is, those areas immediately adjacent to an easy access route such as existing roads/trails, and floatable rivers and streams. These routes are contrasted with those areas further from navigable waterways and roads/trails, access to which would require either considerable effort to walk overland to, or else a relatively expensive means of access such as helicopters. Cultural surveys for the purpose of finding new sites based upon helicopter transportation are quite expensive operations, and are, as a result, not frequently undertaken. In short, the "biggest bang for the buck" when it comes to cultural resource reconnaissance is sticking close to the roads and rivers, which, as explained above, is great for locating historic mining and trapping sites, but not so great for locating other types of resources, such as short-term prehistoric hunting, looking, and special activity sites.

Logistical constraints have particularly affected cultural work in the Upper Black River subunit. As Table 2.15 indicates, this subunit can be divided into (1) that mass of the subunit located east of the Yukon River and which is part of the Black River drainage, an area which is completely bounded by the Yukon and Porcupine rivers and the U.S.-Canadian border, and (2) other, smaller pockets of land west of the Yukon, including a host of Federal mining claims otherwise surrounded by State of Alaska lands. Leaving aside the smaller isolated pockets west of the Yukon, no economically feasible placer gold or other ore bodies were ever located in the vast area of this subunit that encompasses the upper Black River drainage. The area continues to be used today much as it was used throughout the 20th century: for subsistence hunting and fishing by adjacent Alaska Native groups, as well as for fur trapping. No roads have ever been built into this area of the state. The only airstrips were those associated with Alaska Native villages, located further downstream, and off of BLM-managed lands, and a few ridge top airstrips associated with exploratory oil and gas wells.

Thus, to the upper Black River area is time consuming and expensive. Consequently, with no modern development driving cultural surveys, there have been only two cultural surveys undertaken within the 2.8 million acres of the upper Black River drainage managed by the BLM: a two week float trip in 1991 (Kunz 1991), and a one day visit with a helicopter in 2006 (Corbet 2006). These limited efforts resulted in the discovery of three log trapping cabin ruins and 15 surface prehistoric lithic flake sites, which constitute the only known sites within this vast area.

Condition:

Cultural resources in the planning area can be adversely affected by two broad categories of agents of change: (1) those that are caused by people, and (2) those that are caused by nature. Those agents that are *caused by people* include (a) actions permitted or authorized by the BLM (e.g., mining; gravel extraction; archaeological excavation), as well as (b) those that are not authorized and are, in fact, illegal (e.g., vandalism; unauthorized collection of artifacts). Examples of agents that are *caused by nature* include wildland fires (regardless of cultural or natural origin), river/stream and hillside erosion, inadvertent animal disturbance (e.g., bears grubbing), and natural weathering.

About 319 of the 380 sites (84%) in the planning area have been recorded or monitored by BLM cultural staff within the past eight years, and site files exist for each one. Data gathered from the field for the majority of these sites should be sufficient to make a recommendation for eligibility to the NRHP, especially as the vast majority of sites in the planning area would be eligible under Criterion D, and no extensive amount of historical research would therefore be needed on most sites in order to link them to outstanding people, events, architects, or architectural styles. In addition, data currently in the files should be sufficient to assess the integrity of most of these visited sites, and thus assess their potential to yield information important to history or prehistory. Thus, the BLM Fairbanks District Office presently has an up-to-date, broad enough assessment of most of the known sites in the planning area in which to assess their present condition, relative to both the agents of potential change and the cultural resource indicators outlined above.

Most of the resource base in the planning area is largely undisturbed and has sufficient integrity to allow their eligibility to the NRHP. Each of the potential agents of change will be reviewed next, relative to the current condition of sites in the planning area. There are no known cases of animal activities seriously affecting the integrity of any archaeological sites in the planning area. There are no known cases of hillside erosion disturbing or covering over any sites, although there has been quite a bit of this erosional process occurring due to large wildland fires in recent years (see below). Erosion along rivers and streams is affecting some sites, but only a relatively few. By and large, the almost 650 river miles in the planning area's three Wild and Scenic rivers currently have relatively stable shorelines and erosion edges. Of course, there is erosion going on, but it isn't large-scale with continual, annual shifts in the stream courses. Based on BLM data, it would appear that only a handful of known sites have eroded away along stream banks in the past 30-35 years. In short, water erosion has not and is not dramatically affecting the resource base at this time.

Natural weathering and degradation occurs continuously, and affects the wooden and other organic materials present in historic sites much more than the surface lithic sites that, in all but a few cases, comprise the known prehistoric sites in the planning area. The vast majority of the buildings and structures that are present at the historic sites in the planning area have already collapsed, while only a relatively few are standing with intact roofs. The overwhelming majority of known prehistoric sites in the planning area (i.e., sites with only lithic and charcoal artifacts and ecofacts) are not being, or else are no longer being, seriously affected by the weathering process. Likewise, many of the artifacts and features in the historic sites are essentially stable in this subarctic environment and undergoing little appreciable change from year to year. Such items and features include historic trails, roads, airstrips; mining prospects, other pits, shafts, adits, and ditches; cairns, and durable metal artifacts and equipment on the surface; graves/cemeteries. Likewise, now that the majority of historic buildings and structures in the planning area have completely or partially collapsed (i.e., mostly log cabins and other buildings; a relatively few framed buildings and structures), they have essentially stabilized in their present state. As above, a relatively few intact historic buildings still survive, and BLM management, through the current planning process and the Section 106 process (per NHPA 1966, as amended), has already, or will need to, address these features before they begin collapsing. In sum, natural degradation continues at most if not all sites on public lands, but is not currently an overwhelmingly negative process affecting the resource. Most sites in the planning area have stabilized, and require mostly monitoring or, at most, manageable levels of maintenance and Section 106 review.

Wildland fires are an annual event in Interior Alaska, and they have an obvious ability to profoundly affect the contents and integrity of cultural resource sites. Depending upon a host of factors, including but not limited to available local fuels, short-term prior local precipitation

history, and intensity and duration of burning, most organic artifacts, ecofacts, and features are likely to be partially or wholly consumed if burned over by a wildland fire. Metallic and even lithic artifacts can be affected by fire, depending upon, again, the intensity and duration of the blaze. Sites in a boreal forest setting can also be indirectly affected by fires, as when trees topple over onto features and when subsurface deposits are disturbed when trees topple over and their root systems are ripped up from the ground.

Owing to the short fire return interval in Interior Alaska it may be assumed that most if not all surface prehistoric sites have already been burned over by wildland fires at least once, if not multiple times in the past. Even the contents of *buried* prehistoric sites are likely to have been affected by fires prior to their burial, and even by tree throws. This, however, cannot be assumed but would need to be demonstrated in each instance. The BLM has records for the number of historic sites that have burned over only since the mid-1970s, when information on historic cabin sites began to be systematically recorded. Prior to this date, it is unknown how many such sites in the planning area were affected by fire, as the appearance of such sites can be radically altered by fire. On the whole, and despite extensive blazes in 1999, 2004, and 2005, surprisingly few known historical sites have been affected. Fires in the Fortymile in 1999 apparently consumed only a handful of cabins and cabin ruin sites. Huge fires in 2004 burned over about 14 sites in the planning area, 12 historic sites and two prehistoric sites. Large fires in 2005 only burned over four sites, three of them historic.

In sum, wildland fires have affected cultural resources in the planning area. Prehistoric sites are affected to a lesser degree, owing to the nature of the durable artifacts present at these kinds of sites. Subsurface disturbance cannot be ruled out at such sites, although this depends more upon the surface vegetation at any particular site and the intensity of the blaze. More known historic sites have been affected by recent wildland fires, about 20 in the past decade. Still, this accounts for only 6% of the known historic sites in the planning area. Despite the ability of fires to radically alter an historic cabin site (the most prevalent type of known historic site) by thoroughly consuming above-ground architectural and other organic remains, such sites do not necessarily lose their integrity, and can still be eligible for nomination to the NRHP. The fact that one class of data has been removed from the site (i.e., organic surface remains) does not mean that the remaining artifacts, as well as buried artifacts and structural remains, are not enough to still make the site eligible.

Agents of change caused by people include both permitted and non-permitted actions, the latter including vandalism and illegal collection of artifacts. While there are known instances of illegal collection that has caused damage to some sites, BLM knows of no instances of wanton vandalism or destruction at any cultural sites in the planning area, either recently or known to have occurred in the past. Similarly, relatively few sites exhibit signs of illegal digging. Most known sites in the planning area have a surface component. Without a doubt, artifacts have been collected in the past without a permit, from many sites. For instance, very few, if any, historic sites have unbroken bottles visible on the surface. It can assumed that such easily visible, attractable, and portable artifacts have been transported away by people at some point. Only a very limited number of sites, less than a handful in fact, exhibit signs that people have dug and collected artifacts *en masse* with effort and purpose. The nature of illicit artifact collection that has undoubtedly occurred in the planning area seems to focus on cursory collection of a few attractable types of artifacts that are found on the surface. This apparently low amount of collection is owing to the isolation of many sites, sites' overall lack of visibility, and the low rate of visitation that most lands in the planning area receive annually. In sum, there is no history of vandalism in the planning area, and

the illegal collection of artifacts at most sites, regardless of age, appears to have stabilized as most "attractive" portable, surface objects have already been transported away.

Legal agents of change performed by people (e.g., permitted mining; contracted archaeological survey; research excavation) have affected only a limited number of cultural resources in the planning area. Only two non-Section 106, research-focused archaeological excavations are known to have occurred. Both occurred in the Fortymile subunit, one involving a joint BLM-University of Nevada Reno project initiated by the Bureau in 2002 involving historic early 20th century sites, and the other in the early-1980s involving prehistoric sites. The BLM also receives a very limited number of applications for survey from contract archaeology firms to work on Eastern Interior lands for third parties, perhaps only one or two per year. This reconnaissance work is non-destructive and does not adversely affect cultural sites.

Lastly, the BLM permits many actions annually which could affect cultural resources (including wholesale destruction of sites), such as gravel extraction and mining. The BLM has an efficient process in which the field office archaeologist reviews all potential permitted actions that could affect cultural resources prior to the approval of the action by the field office manager. When sites have been identified that may be affected by such actions, avoidance is the preferred option, if possible, and the applicant is usually willing and able to avoid impacting any sites in question. In a few instances over the past decade, cultural sites could not be avoided by permitted actions. In all cases, the BLM consulted with the State Historic Preservation Office (SHPO) and either agreed that the sites in question were not eligible to the NRHP, or else agreed that they were eligible and then developed a mitigative plan to deal with the adverse impacts. This latter option has occurred only a handful of times in the past decade for the 8 million acres of BLM land in the planning area. In sum, cultural resources are being adversely affected in only a minimal way by BLM-permitted actions, and in those instances when they are affected, they are being dealt with adequately through the regular Section 106 process (NHPA 1966, as amended).

2.1.12.3. Trends

Much of this topic has been covered under Section 2.1.1.13.2 Current Condition. The main drivers or agents of change of cultural resources are the same as those already outlined above: (1) those that are caused by people, and (2) those that are caused by nature. Those agents that are caused by people include (a) actions permitted or authorized by the BLM, as well as (b) those that are not authorized. Examples of agents that are caused by nature include wildland fires, erosion, and natural weathering.

The desired condition of cultural resources on Federal lands is that they remain stabilized and not adversely affected by natural and cultural processes. As reviewed above, the current trend of the vast majority of sites in the planning area is that they are stabilized and are not, in large measure, being adversely affected. The integrity of the overwhelming majority of sites has not been, and is not being, compromised.

2.1.12.4. Forecast

The main drivers or agents of change of cultural resources are the same as those already outlined above, and will not be repeated here. Based upon current management practices, there are no additional types of changes to cultural resources, nor any increases in intensity of those agents already outlined above, in the foreseeable future, *excepting* two possible cases: wildland fires and mining. Large-scale and intense wildland fires swept through portions of the planning area in

1999, 2004 and 2005. Years prior to this, as well as in the subsequent 2006 and 2007 fire seasons, saw much less fire impact in the planning area Whether this recent upsurge in fire activity is aberrant, or whether it forecasts the beginning of a larger trend, is not currently known.

Interest in gold mining has gone up in the past couple of years on both state and Federal lands, as the price of this commodity has dramatically increased due to global economic conditions and processes. Current BLM management, regulations, and policies permit mining wherever it is legally allowable and where it does not adversely affect critical environmental, biological, etc. resources. As a result, more mining on BLM-managed lands is occurring, relative to only a few years ago when prices were much reduced. Whether this recent upsurge in mining activity is aberrant, or whether it forecasts the beginning of a larger trend, is not currently known.

The BLM will be reviewing existing mineral withdrawals in the planning area to determine if they should be retained, modified, or revoked. There is potential for several million acres of land currently withdrawn from mineral entry and leasing to become available for such activities. If these withdrawals were lifted, the result would likely be mineral exploration and subsequent mining in areas that have witnessed historic mining in the past. This would very likely impact cultural resources.

2.1.12.5. Key Features

This section describes the geographic location, distribution, areas or types of resource features that should guide land use allocation or management decisions. There are two ways to do this: (1) identify those specific cultural resource sites that could/should pro-actively affect future management decisions, and/or (2) describe specific landscape features and locations that management needs to pay special attention to when making land use decisions.

All sites in the planning area that possess integrity and have the potential to contribute to significant local, regional, and national questions may be eligible to the NRHP, and should be taken into account during land use allocations and management decisions. That said, there are certain sites that have already gone through the Section 106 process, and have either been placed on the NRHP or have been deemed eligible for inclusion in the Register after consultation with the SHPO. This limited number of sites is listed here. At the top of this list are those historic properties on BLM-managed lands in the Eagle District National Historic Landmark (49-EAG-00001), including the following standing buildings: Mule Barn (49-EAG-00021), Granary (49-EAG-00022), Water Wagon Shed (49-EAG-00023),Quartermaster Storehouse (49-EAG-00024), and NCO Quarters (49-EAG-00025), all of which currently undergo active BLM structural maintenance. A signed Cooperative Management Agreement with the local non-profit Eagle Historical Society & Museums to jointly manage these properties was signed in 1991 and is still in effect. Other sites in the planning area currently on the Register include the Steele Creek Roadhouse on the Fortymile River (49-EAG-00019), and the Kink Site on the North Fork of the Fortymile River (49-EAG-00064).

Sites that have been determined eligible for nomination to the NRHP after consultation with the SHPO, but which have not been presently placed on the Register, include the Cripple Creek Campground site (49-CIR-00003), the U.S. Creek Site (49-CIR-00029), the Jack Wade Camp (49-EAG-00012) and associated buildings and structures, the Longbar Cabin (49-CIR-00097), and the Stamp Mill Building at the Hi-Yu Mine (49-LIV-00404).

In addition, there are certain common locations on the landscape where prehistoric and historic sites are more prevalent, essentially owing to the presence of *resource concentrations*. Historic mining and trapping domestic and work sites - the most prevalent forms of historic sites in the planning area - are found immediately adjacent to watercourses, typically less than 50 ft. away. Historic placer gold creeks are known and are historically well documented. Trapping and mining prospecting sites, however, could be located along just about any watercourse in the planning area.

The BLM is presently contracting with the University of Alaska Fairbanks' Anthropology Department to produce a predictive model for prehistoric sites in the Steese-White Mountains subunits, which will be ready for inclusion in the Eastern Interior Draft RMP/EIS. Outside of these subunits, however, the following places on the landscape are known to contain inordinate numbers of prehistoric sites relative to the landscape in general: around lakes, along and at the mouths of salmon streams, ridgelines and elevated hunting overlook locales, lithic quarry sites, and animal salt licks. These types of landscape features ought to be given additional cultural resource attention during the planning process.

2.1.13. Paleontological Resources

2.1.13.1. Current Condition

Little work has been done to inventory paleontological materials on BLM-managed lands in the planning area. BLM has conducted no program of baseline inventory, nor any compilation of existing information, for more than 20 years. 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), 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 their database. Zhang and Blodgett's database has focused primarily on pre-Pleistocene era invertebrates. Lindsey, however, covers the Pleistocene vertebrate faunal, so combining these two sources should provide 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 to ascertain. 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 Eastern Interior planning area. All of these reported finds are located between the Yukon and Tanana rivers; no localities were known on BLM lands north and east of the Yukon, in the Upper Black River subunit. These specific resources are located relatively evenly from the US-Canadian border and up through 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 Eastern Interior planning area, with 259 of these occurring on lands in the Upper Black River subunit, and the remainder on lands between the Tanana and Yukon rivers. Again, their numbers are for all land statuses, not just BLM lands, and are largely pre-Pleistocene.

The nature of the paleontological resources in the planning area spans the breadth of the Paleozoic Era (~ 540-250 million years ago), the Mesozoic Era (~ 250-65 mya), and the Cenozoic (~65 mya – 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 (~ 1.8 mya to ~ 10 thousand years ago).

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.

2.1.14. Visual Resources

Visual Resource Management (VRM) addresses the visual quality of landscapes for views of natural landscapes and unique areas with high visual quality. BLM is required to manage BLM-managed lands in a manner that will preserve scenic values through a broad range of authorities. The FLPMA and NEPA include Federal mandates for VRM. Other guidance includes BLM Manual 8400 and BLM handbooks H-8410-1and H-1601-1.

BLM's VRM classification system consists of three phases: the visual resource inventory, which considers the existing scenic quality and public sensitivity of a landscape; the establishment of management classes through land use plans; and analysis of management actions to ensure compliance through Visual Resource Contrast Rating, which looks at landscape characteristics of form, line, color, and texture. VRM management classes are established through the RMP, and adjustments are made to reflect resource allocation decisions made in the RMP. The intent of VRM is to minimize the visual impacts of all surface-disturbing activities, regardless of the class in which they occur.

2.1.14.1. Indicator

BLM categorizes visual resources into four classes, based on scenic quality evaluations, sensitivity level analysis, and the delineation of distance zones. The classes are:

VRM Class I: Preserves the existing character of the landscape where changes are generally not seen, do not attract attention, and do not change or modify the existing character of the landscape.

VRM Class II: Preserves the existing character of the landscape where changes may be seen but should not attract the attention of the casual observer. Changes must repeat the basic elements of form, line, color, and texture evident in the characteristic landscape.

VRM Class III: Allows moderate changes in the basic elements of form, line, color, and texture that may be evident in the characteristic landscape; however, changes may attract the attention, but should not dominate the view, of the casual observer. Changes should repeat the basic elements of form, line, color, and texture found in the predominate natural landscape features.

VRM Class IV: Allows for major modification of the existing character of the landscape. Changes may dominate the view and be the major focus of viewer attention. Every attempt should be made to minimize the impact of these modifications through careful location, minimal disturbance and repeating the basic landscape characteristics of form, line, color, and texture.

2.1.14.2. Current Condition

The majority of the four subunitsin the planning area are part of the Yukon-Tanana Upland physiographic province, which is characterized as a semi-mountainous area in east-central Alaska, bounded by the Yukon and Tanana Rivers. The Yukon-Tanana Uplands is characterized by rounded ridges and gentle slopes with elevations generally 3,000-5,000 feet above sea level, but above valley floors at 500 to 1,500 feet in elevation. Compact rugged mountains also characterize the planning area with some elevations extending even higher. Some domes extend as high as 6,800 feet above valley floors. These domes primarily occur in the White and Crazy Mountains.

Some sections of the Upper Black River subunit are part of the Porcupine Plateau physiographic province, which is roughly bounded by the Yukon River to the south, the Porcupine River to the north and the Ogilvie Mountains to the east. The province is characterized by low ridges with gentle slopes and rounded to flat summits of 1,500 to 2,500 feet above sea level. A few domes and mountains rise to 3,500 in elevation. Valley floors are broad with meandering rivers.

A small portion of the Upper Black River subunit along the Canada border is part of the Ogilvie Mountains province, which has sharp crestlines, precipitous slopes and deep narrow valleys. The mountains rise to 5,000 feet in elevation, with some valley bottoms as low as 1,000 feet (for a relief of 4,000 feet). Narrow valleys are interconnected and major passes are few. Narrow valleys are interrupted by gorges where rivers cross cliff-forming layers of rock (Wahrhaftig 1965).

The VRM classes for the White Mountains NRA were established with the White Mountains RMP (BLM 1986b). Areas managed as primitive, including the viewshed of Beaver Creek and the White Mountain Trail, now known as the Wickersham and Summit trails are assigned VRM Class II (Map 2.6 White Mountains Current ROS Classification). The rest of the recreation area is assigned VRM Class III. The Research Natural Areas (RNAs) were not assigned a class unto themselves, but are being managed as the designation of the lands adjacent to them by the lower class, and thus are in the VRM Class II category.

The VRM classes for the Steese NCA were established with the Steese RMP (1986a). Areas managed as primitive and the viewshed of Birch Creek are assigned VRM Class II. The rest of the conservation area is assigned VRM Class III (Map 2.7 Steese NCA, Current ROS Classification). As in the White Mountains, the RNAs are being managed as the designation of the lands adjacent to them by the lower class, thus Mount Prindle RNA is managed as VRM Class II, and Big Windy Hot Springs RNA is managed as VRM Class III. The Pinnell Mountain National Recreation Trail is designated as primitive and is managed as VRM Class II.

The VRM class for Beaver Creek and Beaver Creek national wild rivers was established by Manual 8351 – Wild and Scenic Rivers Policy and Program Direction for Identification, Evaluation, and Management 1993 which states “The BLM assigns a Class I visual resource inventory to all designated river classified as wild” page 26. (Map 3.3 Steese and White Mountains - Existing VRM Designations).

The VRM class for the Fortymile National Wild and Scenic River System segments designated as “wild” were also established by Manual 8351 (Map 2.1 Hydrography and Wild and Scenic River Corridors). . No classes have been assigned to scenic or recreational river segments. The Fortymile area outside the Fortymile National Wild and Scenic River System is covered by the Fortymile MFP (1980) which addresses Visual Resources.

The Upper Black River subunit is not covered by an existing plan. Limited inventory was accomplished in 2008, but no inventory or management classes have been assigned.

2.1.14.3. Trends

Recreational OHV use has increased in most of the planning area, creating noticeable visual impacts, as seen from elevated locations or along hillsides in moist or permafrost soils. Users operate OHVs during the hunting season to access high ground or valley bottoms. This activity also occurs during the region's typically wettest season. Most routes follow the fall line or traverse riparian vegetation.

2.1.14.4. Forecast

Most of the planning area is open to OHV use of less than 1,500 pounds GVWR, and thus is susceptible to increased route development, sometimes in areas that are marginally suited for OHV travel. Trail designations, in conjunction with a comprehensive travel management plan, could reduce or mitigate some of these impacts.

Other activities that could impact the visual quality of the planning area are the modification or revocation of withdraws for mineral entry with subsequent development of mining claims and other mineral extraction operations, development outside the planning area on adjacent state and private lands, development of transportation and utility corridors to private lands both inside and outside the planning area, and the creation selection and conveyance of lands within the planning area creating inholdings.

2.1.14.5. Key Features

The main locations within the planning area possessing outstanding scenic quality include, but are not limited to:

- **Mount Prindle Research Natural Area** located in both the White Mountains NRA and the Steese NCA, contains excellent examples of both glaciated landforms and periglacial features (Juday 1988a).
- **Limestone Jags Research Natural Area** located in the White Mountains NRA was selected for its geologic features including karst or limestone caves, underground streams, natural bridges or arches, and emergent cold springs (Juday 1989).
- **Serpentine Slide Research Natural Area** located in the White Mountains NRA contains two geologic features – serpentine and faultline features (Juday 1988b).
- **Big Windy Hot Springs Research Natural Area** located in the Steese NCA contains an undisturbed hot springs (Juday 1998).
- Puzzle Gulch located in the Steese NCA.
- Ogilvie Mountains located in the Black River area.
- Ridgecrest areas of the White Mountains Range.
- Uplands adjacent to Victoria Creek, including Victoria Mountain and Mount Schwatka in the White Mountains NRA.
- Uplands associated with Mt. Prindle - Rocky Mountain area in both the White Mountains NRA and the Steese NCA.

2.1.15. Wilderness Characteristics

There are no areas within any of the four subunits in the planning area that are currently being managed for wilderness characteristics. Wilderness character has not been assessed on lands within the planning area. This process is underway and the information will be included in the Draft RMP/EIS.

2.1.15.1. Indicator

Section 2(c) of the Wilderness Act (1964) identifies four elements related to lands possessing wilderness characteristics:

- Generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;
- Has outstanding opportunities for solitude or a primitive and unconfined type of recreation;
- Has at least 5,000 acres of land or is sufficient size to make practicable its preservation and use in an unimpaired condition; and
- May also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

2.1.16. Cave and Karst Resources

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 implementing 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 Part 37.2). BLM 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 the use by the public, both now and in the future (BLM Manual 8380).

A cave is defined as any naturally occurring void, cavity, recess, or system of interconnected passages occurring beneath the surface of the Earth or within a cliff or ledge large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made (FCRPA, Sec. 3(1)). In the planning area, the majority of caves are limestone dissolution joint-type caves (Juday 1989). A process where 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 & Sullivan, 1997). They may also be considered non-renewable due to paleontological and archaeological deposits, speleothems (formations inside caves), and biological resources.

2.1.16.1. Indicator

Indicators of cave condition are dependent on the resources the cave possesses, including:

- Biota: The cave serves as seasonal or yearlong habitat for organisms or animals or contains species or subspecies of flora or fauna native to caves, or are sensitive to disruption, or are found on State or Federal Sensitive, Threatened, or Endangered species lists.
- Cultural: The cave contains historic or archaeological resources included in or eligible for inclusion in the National Register of Historic Places because of its research importance for history or prehistory, its historical association, or other historical or traditional significance.
- Geological/Mineralogic/Paleontologic: The cave possesses one or more of the following features: geologic or mineralogic features that are fragile or exhibit interesting formation.

2.1.16.2. Current Condition

A quantitative inventory of caves in the Eastern Interior planning area was conducted 2001-2004 and hundreds of small caves were identified in the White Mountains. There are six known significant caves in the planning area: three in the White Mountains NRA, two in the Upper Black River subunit and one in the Steese NCA. Because of their remoteness and lack of access, these six caves are pristine and lack evidence of contemporary human use.

2.1.16.3. Trends

The White Mountains Subunit is the only one that has had any appreciable human activity within areas where caves and or karst features exist. A cave located in the Steese NCA and a group of caves found in the Black River region have no evidence of contemporary use or activity. Because of their remote locations, lack of access, and marginal size and extent, the expectation is that the current low level of human activity will continue within the Steese and the Upper Black River subunits.

The White Mountains has an extensive area of limestone topography that contains many caves and karst features. Approximately one third are located within the Limestone Jags Research Natural Area (RNA). Three caves within the Limestone Jags RNA were identified as significant. The limestone region of the White Mountains is a popular destination for Dall sheep hunters and hikers. The primary access into Limestone Jags is either by floating Beaver Creek or by aircraft landing on ridgetops and gravel bars. The Beaver Creek river corridor, which is closed to summer OHV use, prevents summer access into the cave and karst region by OHVs.

Use of the cave and karst region of the White Mountains has been increasing primarily because access for floating Beaver Creek has become easier with the construction of the Nome Creek Road. BLM data estimate 100 people floated Beaver Creek annually, prior to construction of the road. Since construction of the road, approximately 300 people float Beaver Creek annually. The current estimate of users accessing the cave and karst region of the White Mountains is 40 per year. The low impact nature of hiking into the cave and karst region is encouraged and is compatible with uses for which the recreation area was established.

2.1.16.4. Forecast

Given the low level of access, and the fact that the caves lack cultural resources and sensitive species, little or no change to the condition of the karst resources is expected under current management.

2.1.16.5. Key Features

Key karst features include the six significant caves that have been identified in the planning area. Glenn Juday (1989) identified a large cave in Limestone Jags RNA, referred to as the Icedam Cave. This cave is located approximately 90 meters above Fossil Creek, near the location of Cave AK-029-003. Until the 2008 summer field season, BLM assumed the two caves were one and the same. This is apparently not the case. Icedam Cave has not been relocated by BLM and is not listed as a significant cave.

Table 2.14. Significant Caves in the Planning Area

Cave Name and Number	Location	Comments
Bison Bone Cave (AK-029-001)	White Mountains, Limestone Jags RNA	Small dissolution joint cave, upper portion of Limstone Gulch.
Cave AK-029-002	White Mountains, Limestone Jags RNA	Small crack cave just above Fossil Creek, upper end of Limestone Gulch. Contains paleontological remains.
Cave AK-029-003	White Mountains, Limestone Jags RNA	Near Fossil Creek. No paleontological or cultural evidence found.
Fort Creek/Smoky's Cave (AK-028-00)	Upper Black River Subunit	Shallow cave, rumored to have been a trapper's cache. No evidence of human use found.
Mesa Cave (AK-028-002)	Upper Black River Subunit	Relatively small cave, contains some cave formations.
Sheep Cave (AK-028-003)	Steese NCA, South Unit	Near a rocky bluff used by Dall sheep. No evidence of human activity.

2.2. Resource Uses

2.2.1. Forestry and Woodland Products

2.2.1.1. Current Level and Location of Use

Local use of forest products in the planning area is generally limited to firewood, house logs, small timber sales, and the harvest of mushrooms. According to BLM records, within the Eastern Interior planning area, nine Forest Product Sales, 98 Small Timber Sales, and 45 Free Use Timber Permits have been authorized. The majority of these permits were issued before 1980; some appear to not even be in the planning area, and many of the early records have been destroyed or are poorly documented (pers comm. Gina Ristow, BLM Records Manager). Forest Product Sales include any non-lumber commercial use of forest products including mushrooms, berries, and bark. Small Timber sales are used to authorize commercial firewood and house log sales of less than 250 thousand board feet (MBF).

Since the 1980s five Forest Products Sales have been issued including one in 1988 for 40 cords of wood near 50 mile Elliott Highway. The other four were issued after 2000 for mushroom harvest along the Elliott Highway where wildfires had occurred. Of the 98 Small Timber Sales about 15 have been issued throughout the planning area since 1980. Alaska residents are authorized to obtain Free Use Timber Permits for the harvest of dead and down material. Approximately 10 Free Use Timber Permits have been issued since 1980. Most authorized use amounts appear to be between 5-10 cords of firewood, with the exception of one permit issued to the BLM for the purpose of historic cabin restoration along the Fortymile River.

Several small communities and many isolated residences are located within the planning area. The residents of these often rely, to some extent, on local wood products for building and heating. Undoubtedly, some residents harvest forest resources without benefit of permits or authorizations. While the quantity of unregulated harvest is unknown, it would be reasonable to assume that it is at least equivalent if not somewhat greater than to the amount harvested under permit.

The Tanana Valley State Forest, encompassing 1.78 million acres, is located both within and near (within 50 miles) the planning area. This forest lies along the southern boundary of the planning area and directly to the west of it within the Tanana River basin. Management by the State of Alaska Division of Forestry is guided by the Tanana Valley State Forest Management Plan. This area is open for a multitude of uses but timber production is the major commercial activity. Reports indicate that between 1998 and 2007, the Northern Region DNR, including the Fairbanks, Delta, and Tok areas, sold between 4,000 and 13,000 MBF of timber annually. Although 12,478 MBF were sold in 2006, only 6,420 MBF were sold in 2007. In 2007, the Northern Region DNR also issued 355 Personal Use Permits for timber/firewood harvest on State land.

2.2.1.2. Forecast or Anticipated Demand for Use

The demand for timber and forest products within the planning area is expected to increase somewhat in the foreseeable future. The current increase in fuel prices has prompted significant interest in alternative fuel sources including wood. The number of small, local mills in and around Fairbanks, Delta, and Tok has also increased in the past decade. Some of these mills have recently upgraded their facilities to include kilns and planers. Large mills including the pulp mills on Southeast Alaska appear to be on the decline along with the overall export of forest products from Alaska. So far timber sales from state land seem to adequately meet current demand in Interior Alaska with around half of all timber sale offerings going unsold.

Though demand for forest products are expected to increase, the direct impact on BLM-managed lands should not be as significant. Access from local communities to BLM lands is difficult compared to access to State and/or private lands. These non-BLM lands provide a greater opportunity for accessible forest products. The issuance of commercial mushroom permits in the future does not appear to be of that much significance. After the Tok fire in 1990 substantial harvest of mushrooms did occur, but after record wildfire occurrences in both 2004 and 2005 little mushroom harvesting was done. Morrell mushrooms do occur in post-fire areas but rarely with the abundance seen around Tok after the 1990 fire.

2.2.1.3. Key Features or Areas of High Potential

There are no identified areas with high timber value in the planning area. The majority of communities are surrounded by state, local and private lands. BLM-managed lands are generally greater than 30 miles from the nearest community (Map 1.2). Much of BLM's land, especially

that which is road accessible, is also under special designation including; NRA, NCA, and National Wild and Scenic rivers. Since BLM lands in the planning area have few if any extensive tracts of high value timber, timber harvest is not a key resource of the area. Small isolated tracts of BLM land may exist within reasonable proximity to some smaller communities. If any of these communities were to develop any sort of wood burning power or heat generation, BLM may be in a position to allow some level of wood harvest.

2.2.2. Livestock Grazing

2.2.2.1. Current Level and Location of Use

There are currently no permitted livestock operations within the planning area and there have been no applications for grazing permits since 1978. The BLM received approximately 17 applications for grazing permits within the planning area between 1947 and 1978. Of these applications, only 8 grazing leases were issued and it appears that only 5-6 of these were ever actually used. The leases were for grazing of horses or cattle. Most of the applications were in the Fortymile subunit, near Fairbanks, Delta, Tok, or Chicken, for riverbed or slough areas. Many of the areas applied for are no longer under BLM management, are now within conservation units, or are selected by the State or a Native corporation.

2.2.2.2. Forecast or Anticipated Demand for Use

The BLM does not anticipate any applications for livestock grazing in the future except perhaps grazing associated with special recreation use permits, such as hunting guides using horses. Grazing associated with recreation is permitted through the recreation program. The grazing regulations for Alaska (43 CFR 4200) were removed in 1998 due to the lack of demand for such permits and the lack of land suitable for such permits (Federal Register 1998).

2.2.2.3. Key Features or Areas of High Potential

There are no identified areas with high grazing potential in the planning area. Livestock grazing on remote BLM lands in the planning area is not practical due to potential conflicts with wildlife (disease and competition), potential future introduction of wood bison into the Yukon Flats NWR, lack of suitable grazing lands, the potential for predation of livestock by bears and wolves, and the lack of access for livestock operators. Areas close to communities where grazing might be more practical are generally State or private land.

2.2.3. Minerals

The area profile for leasable and locatable minerals and mineral materials is included in the mineral occurrence and potential development reports and reasonably forseeable development scenarios (BLM 2008 and BLM 2009).

2.2.4. Recreation

Special Recreation Management Areas

The RMP planning process identifies areas where recreation is the management focus. These areas are considered to be Special Recreation Management Areas (SRMA), and are traditionally areas that have received higher recreation use, required significant recreation investment, and/or where more intensive recreation management was needed. The 2005 revision of the BLM Land Use Planning Handbook (BLM 2005, Appendix C) amended the characteristics for identifying a SRMA. SRMAs are now areas identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific "structured" recreation opportunities (i.e. activities, experiences, and beneficial-outcomes). SRMAs now must have a distinct, primary recreation-tourism market (destination, community, or undeveloped) and a corresponding and distinguishing recreation management strategy. Recreation settings or natural resource settings are prescribed as part of the land use allocation decision. Subsequent implementing actions, as identified in the activity planning framework, are proactive in nature and address management, marketing/visitor information, monitoring, and administration.

The Eastern Interior FOcurrently manages two units as SRMAs and has identified two additional units for SRMA consideration during planning (Map 2.6 White Mountains, Current ROS Classification and Map 2.7 Steese NCA, Current ROS Classification).

Existing SRMA	**Size**
Steese National Conservation Area	1.2 million acres
White Mountains National Recreation Area	1 million acres
Potential SRMA	
Fortymile NWSR Corridor	250,000 acres
Upper Black River Area	No estimate at this time

Extensive Recreation Management Areas

Anything not delineated as a SRMA is considered to be an Extensive Recreation Management Area (ERMA). ERMAs are public lands where recreation is unstructured and does not require intensive management or significant investments in trails or facilities. This type of undirected or "dispersed" recreation management affords visitors the opportunity to create their own adventure and corresponding experience. Visitors receive little in the way of services or developed recreational facilities. Within ERMAs, recreation management is reactive, and thus custodial, and addresses visitor health and safety, resource protection and use, and user conflicts.

A significant portion of the public lands within the Eastern Interior planning area are currently being managed as an ERMA, particularly those currently located in the Black River Subunit (Map 1.1). The lands within this ERMA are characterized by a diversity of natural resource settings and a range of recreation opportunities.

Because recreation is not the primary management objective in ERMAs, the 2005 revision of the Land Use Planning Handbook, clarified that management within all ERMAs is focused on custodial implementation actions that address visitor health and safety, user conflict, resource protection issues, and maintaining appropriate activity participation. Implementation actions are not directed at maintaining or creating particular physical, social, or administrative natural resource setting prescriptions.

Table 2.15. Differences between ERMA and SRMA Management and Objectives

ERMA	**SRMA**
Management	Management

ERMA	SRMA
Unstructured – No identifiable market demand for structured recreation.	*Structured* – Tied to identified primary market demand for structured recreation (i.e., activities, experiences, and benefits and the maintenance of recreation setting character).
Objectives	Objectives
Reactive and Custodial – Directed at taking care of dispersed recreation-tourism activity.	*Proactive* – Directed at producing specific recreation opportunities and outcomes.

The following sections provide specific information related to each existing and potential ERMA and SRMA. Including, a general overview, description of the current level (including potential) and locations of use, forecasts and/or the anticipated demand for use, and key features or the areas of high potential for use.

2.2.4.1. Fortymile Subunit

On December 2, 1980, ANILCA (P.L. 96-487) established the Fortymile, and certain tributaries, as a component of the National Wild and Scenic Rivers System. Subject to valid existing rights, ANILCA classified and designated approximately 392 miles (630 km) of stream in the Fortymile drainage pursuant to the Wild and Scenic Rivers Act (WSRA, P.L. 90-542). 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. In response to these directives, the detailed boundaries of the Fortymile NWSR were set forth by the Fortymile River Management Plan (BLM 1983a) signed in December 1983. Based on the designated beginning and ending points of the river, and the legislative control policies and consideration described within this plan, the Fortymile NWSR corridor encompasses approximately 250,000 acres.

In addition to the Fortymile NWSR, the Fortymile subunit includes dispersed BLM lands south of Yukon Charlie Rivers Preserve and north of the Alaska Highway.

2.2.4.1.1. Current Level and Location of Use

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. Located along the highway are several small communities, the most noted of which include 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 1.1).

Public Land Visitors

Although the majority of visitors to the Fortymile area are Alaska residents, an increasing number are from national and international locations. Drawn to the area by its vast array of recreational opportunities and wilderness setting, visitors outside of Alaska 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 during summer and fall months, from May through September.

Resident users of the Fortymile area 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), public lands administered by the BLM are often used as "backyard" recreation areas by local residents. The communities of Chicken and Eagle are located directly adjacent to BLM lands. This proximity to public lands provides year-round access to outstanding recreational opportunities. This usage is further proliferated with the advent of the summer season, as populations in the Alaskan basin grow with an influx of seasonal residency.

General Use Figures

The approximately 250,000 acres that comprise the Fortymile NWSR corridor receive an estimated 90,000 visits per year, according to BLM's Recreation Management Information System (RMIS).

Recreation Activities

BLM-managed public lands in the Fortymile area offer a diversity of outdoor recreation opportunities, including 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, and off-highway vehicle (OHV) use. In addition, the presence of migratory and resident wildlife produces abundant opportunities for hunting, trapping, photography, and wildlife viewing. Since water-based recreation activities, camping, and hunting account for the majority of annual visitation on BLM-managed public lands in the Fortymile region, the following sections provide more detailed information regarding these activities and their current levels and locations of use.

Water-based Recreation

The Fortymile National Wild and Scenic River (NWSR) provides many outdoor recreation opportunities in a variety of scenic settings. Camping, fishing, float boating, including rafting, kayaking, and canoeing, hiking, picnicking, photo taking, sightseeing, and wildlife viewing may all be enjoyed along the river corridor. With its variety of access points providing a diversity of floating times, the Fortymile River offers trips for boaters of varying abilities and experience levels.

Fortymile River Access Points

The **Joseph Airstrip** is the easiest to access the Middle Fork and North Fork areas. Landing in this area requires experienced pilots and capable aircraft. A 50-yard trail at the eastern end of the runway leads to the river. The **Fortymile Bridge Wayside** boat landing, at Mile 112 of the Taylor Highway, is heavily used by miners and recreationists. **Walker Fork Campground**, at Mile 82 of the Taylor Highway, provides floatable access, but only at high water during the spring months. **South Fork Bridge Wayside**, at Mile 75 of the Taylor Highway, has a parking lot, toilets and a boat ramp. **Mosquito Fork Bridge Wayside**, at Mile 64 of the Taylor Highway, provides floatable access to the Mosquito Fork during periods of exceptionally high water. Chicken residents use this access point to get drinking water. The **West Fork Bridge** at Mile 49 on the Taylor Highway, provides access to the West Fork of the Dennison River. Most of the year there is not enough water for canoeing or rafting. The **West Fork Campground**, is a quarter-mile from the bridge. A long-term parking area lies south of the bridge. At **Clinton Creek Bridge**, an old parking lot and camping area are available on river, just below the mouth of Clinton Creek. No

facilities or services are available. Boaters who float down the Fortymile to the Yukon River will find their first opportunity to take out at Eagle, which has three boat landings.

River Use Figures

While registration forms located at river put-in locations offer some indication of annual river use, exact figures and trip durations remain unclear. This lack of exact information can be attributed to the fact that not all river users sign the registration forms at put-in areas and, of those that do, not all will fill out the forms in their entirety. Overall, river use in the area is readily accessible, given the distance from major cities such as Fairbanks and Anchorage keeps visitation at a relatively low number.

From a meteorological perspective, annual river use varies by rainfall, as trips are often planned around changing water flows and conditions. If flows drop below feasible boating levels, users are likely to migrate to more favorable conditions on other waterways outside of the area.

Camping

Recreational camping can be divided into two primary categories, dispersed and developed. Dispersed camping, although less prevalent in the area, predominately occurs between the months of mid-August and late-September, in concurrence with the fall big game hunting seasons. Outside of this time frame, dispersed camping may also be observed in the establishment of impromptu camp sites by Taylor Highway travelers. It is not uncommon to view vehicles stopped for the night in gravel pits, at roadside pull-offs, or other areas that provide level ground. Although the majority of dispersed camping is performed with self-contained vehicles (i.e. motor homes, pick-ups with campers, and trailers), tents may also be observed.

The Fortymile region offers three developed campgrounds. The West Fork Campground, located at Mile 49 of the Taylor Highway, has 25 campsites. The Walker Fork Campground, at Mile 82, has 18 campsites. The Eagle Campground, located at Mile 160 of the Taylor Highway, has 18 sites within walking distance of historic Fort Egbert and the village of Eagle. Each campground offers basic services, including outhouses, drinking water, firewood, and campground hosts.

While the vast majority of public lands in the Fortymile region are open to camping, special restrictions apply to public lands adjacent to the Fortymile NWSR. Camping is prohibited at the following sites along the Taylor Highway:

- Logging Cabin Creek Bridge (Mile 43)
- West Fork Bridge (Mile 49)
- Mosquito Fork Bridge (Mile 64)
- South Fork Bridge (Mile 75)
- Walker Fork Bridge (Mile 82)
- Fortymile Bridge (Mile 112)
- King Creek (Mile 119)
- Columbia Creek (Mile 124)
- Jack Wade Creek between Walker Fork Campground (Mile 82) and Warner Creek (Mile 92)

Camping Use Figures

Current use figures for dispersed recreational camping in the Fortymile Subunit are somewhat unclear due to the inherent nature of the activity. While little has be done to account for adjusting levels of dispersed camping in the region, general data regarding developed campground use has

been effectively gathered through BLM's Recreation Fee Program. Campground registration forms provide a relatively accurate level of average annual use. When collectively combined, the three developed campgrounds in the area receive approximately 16,000 visits per year.

Hunting

Hunting within the Fortymile area has remained a major recreational activity and subsistence resource. Usually occurring in the late summer and early fall, the Fortymile area has seen an increase in hunting use from local, state, and out-of-state visitors.

Spurred in part by an increase in media attention to the area, the popularization of hunting in the Fortymile area has led to an increase in motorized travel throughout the corridor. Travel along the Taylor Highway has been most notable as an increased presence of self-contained vehicles scout for game and areas to park. An increase in cross-country travel has also occurred in areas off the Taylor Highway where recreational hunters use OHVs and utility terrain vehicles (UTV) for accessing remote areas and for retrieving game. Big game animals most commonly hunted in the planning area include caribou and moose.

2.2.4.1.2. Forecast or Anticipated Demand for Use

Projections by the Alaska Department of Labor and Workforce Development indicate that the state's total population will most likely increase by 25 percent, from 670,053 in 2006, to 838,676 in 2030 (ADLWD 2007). Furthermore, although the conditions of these predictions do not account for events of great magnitude, the large-scale construction of an Alaska Natural Gas Pipeline could further proliferate these estimates through a sudden rise of in-migration to the region. In the event of this occurrence, the Fortymile planning area could anticipate considerable growth in land use and activity participation.

Since water-based recreation activities, camping, and hunting account for the majority of current annual visitation to the area, it is perceived that the demand for these activities will continue to grow in the future. Interest in recreational gold mining may also increase, as demonstrated by recent trends and prices for gold. Compared to only a few years ago when prices were much reduced, mining on public lands has continued to emerge as a popular recreational pursuit.

As human activity increases in the planning area, existing public recreation facilities, may meet or exceed their accessible capacity. In accordance with this growth, the need for additional campgrounds, trails, waysides, public use cabins, and other related facilities may gradually arise as the anticipated demand for recreational use unfolds.

2.2.4.1.3. Key Features or Areas of High Potential

Fortymile National Wild and Scenic River

Located in Interior Alaska along the United States-Canada Border, the Fortymile River is a waterway of significant historic, cultural, and natural qualities. It was the scene of the first gold rush in the interior of Alaska, and remnants of the mining activity of those days continue to dot the landscape. For boaters contemplating a trip on the Fortymile River, glimpses of these remnants may still be seen today, including gold-mining dredges, turn-of-the-century trapper cabins and abandoned townsites. It was for these reasons, among many others, that the ANILCA,

(P.L. 96-487) established the Fortymile, and certain tributaries, as a component of the National Wild and Scenic Rivers System.

Fort Egbert National Historic Landmark

Located along the Yukon River, 12 miles downstream from the Canadian border, Fort Egbert is an abandoned United States Army post that was established in 1899 near the present-day community of Eagle. Having played a key role in the development of communication and transportation systems on the Alaskan frontier, Fort Egbert is a significant icon of Alaskan history that helped shaped the period following the Klondike gold rush.

Fort Egbert became the first communication center for Alaska when the 1,506 mile-long Washington-Alaska Military Cable and Telegraph System (WAMCATS) was completed on June 29, 1903. While WAMCATS occupied the soldiers of Fort Egbert, the civilians in Eagle organized a city government. On July 15, 1900, Judge James Wickersham arrived to establish the first Federal court in Interior Alaska and built a courthouse and a jail in Eagle. In 1902, with a permanent population of 300, Eagle became the second incorporated city in Alaska.

Because of the site's significance in Alaskan and American history, Fort Egbert was placed on the National Register of Historic Places in 1970 as part of the Eagle Historic District. Through the cooperative efforts of the City of Eagle and the BLM, these buildings were stabilized and preserved in 1975 and 1976. In 1978, Fort Egbert, along with several other historic buildings in Eagle, was designated a National Historic Landmark. The core area of the fort includes five standing historic structures and the structural ruins or locations of another 40 buildings. The 40 acres comprising the fort's core area also encompasses several modern administrative buildings, a modern campground, an airstrip and numerous other features associated with the fort.

Dredges of the Fortymile Region

The first gold dredges were brought into the Fortymile country in 1907, signaling a new phase of mining where technology and large-scale financial backing took the place of the solitary miner with a grubstake. At least eight dredges operated in the Alaska basin at various times between 1907 and 1967, and three of them or their remains are accessible to road travelers today.

2.2.4.2. Steese National Conservation Area

The Steese NCA was established by ANILCA (P.L. 96-487) in 1980 (Map 2.7, Steese NCA, Current ROS Classifications) and is located approximately 70 miles north of Fairbanks, Alaska. The Steese NCA encompasses approximately 1.2 million acres, and is divided into two units separated by State of Alaska lands and the Steese Highway. The North Unit is bounded on the southwest by the Fairbanks North Star Borough, on the west by the White Mountains NRA, on the north by the Yukon Flats NWR, and on the east and south by State of Alaska lands. The South Unit is primarily bounded by State of Alaska lands. Additionally, it is bounded on the west and south by the Fairbanks North Star Borough and on the east by the Yukon-Charley Rivers National Preserve.

The Steese NCA 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.

2.2.4.2.1. Current Level and Location of Use

Public Land Visitors

Approximately 40% of the visitors to the Steese NCA are Alaska residents, many of which reside in the Fairbanks and North Pole areas. Approximately 40% of visitors are U.S. residents from other states, and approximately 15% are from international locations. Visitors are drawn to the area by the vast array of recreational opportunities in an Alaskan wildland setting, road to road white water river activities, and the Pinnell Mountain National Recreation Trail (Pinnell Mountain Trail). Visitor activities include hiking and backpacking, float-boating and fishing, photography, and wildlife viewing and hunting. The majority of non-resident visitor use occurs from May through the end of September.

General Use Figures

Because of the dispersed use associated with the Steese NCA, public use estimates and activity participation estimates depend on field observations, traffic counts and professional judgment. These are not scientifically based but are approximate. The 1.2 milllion acres that comprise the NCA receive an estimated 6,000 visits per year.

Recreation Activities

BLM-managed public lands in the Steese NCA offer a diversity of outdoor recreation pursuits, including land, water and snow-based activities. Examples of recreation activities commonly conducted in the area include boating and river-based recreation, fishing, gathering of edible plants and berries, hiking and backpacking, dog mushing and skiing, skijoring, recreational mining, 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 summer months, when the area is relatively snow-free.

<u>Winter Recreation</u>

The Steese NCA provides a many outdoor recreational opportunities in a variety of primitive and scenic settings. Snowmobiling, dog mushing, skijoring, and cross-country skiing, photography, wildlife viewing, hunting and sightseeing may all be enjoyed during the winter months. Some areas are difficult to access during the summer months due to poor soil conditions, such as muskeg and tussocks, as well as seasonal closures of the Birch Creek National Wild River corridor. With adequate snow cover, the winter months provide great opportunities to enjoy these areas.

<u>Summer Recreation</u>

The Steese NCA area provides numerous opportunities for outdoor recreation activities in the summer months, which usually lasts from May through September. OHV use, hiking and backpacking, camping, fishing, and hunting, berry picking, photography, sightseeing, and wildlife viewing are popular activities. The majority of summer recreation activities occur along the Pinnell Mountain Trail, Birch Creek, and along OHV routes scattered throughout both the North and South Units, with primary access starting from trail heads or along state roads.

<u>Hunting</u>

Hunting remains a major recreational activity within the Steese NCA. Usually occurring in the late summer and early fall, hunting has seen an increase in use from local, state, and out-of-state visitors, as well as military personnel. The largest number of users in the summer months occurs during moose hunting season, from September 1 to September 15. The number of users generally decreases in more remote areas, farther from the road system. Due to the close proximity of the Steese NCA to the city of Fairbanks and recent increases in fuel prices, a noticeable increase in use has occurred over the past 10 years. The Great Unknown Creek and Harrison Creek drainages receive the largest number of users, partly due to ease of access. An increase in cross-country travel also has occurred, where recreational hunters use OHVs for accessing remote areas and for retrieving game.

Big game animals most commonly sought after in the planning area include moose, caribou, sheep, black bears, and grizzly bears. Spring bear hunting is popular but does not attract the number of visitors as fall big-game hunting. Grouse and ptarmigan hunting also attract a small number of visitors in the fall and throughout the winter season.

Camping

Recreational camping within the Steese NCA is dispersed and primarily occurs between the period of mid-August to late-September, in concurrence with the fall hunting seasons. Dispersed camping typically occurs along travel routes throughout the NCA, and along the Pinnell Mountain Trail and Birch Creek. A 10-day camping limit was established through Special Rules July 8, 1988 (FR 1988) throughout the area. Due to the dispersed nature of camping in the NCA, camping use figures have not been obtained.

Birch Creek National Wild River

Most float boaters begin their trip at the Upper Birch Creek Wayside, at Mile 94 of the Steese Highway. Floaters can launch their boats from the wayside and float approximately 110 miles to the Lower Birch Creek Wayside, at Mile 140.4 of the Steese Highway. Depending on water levels, rapids along the way can be Class II or Class III whitewater. A trip along Birch Creek takes an average of 5 to 7 days.

A shorter trip on Birch Creek can last one or two days. These trips typically begin at the Lower Birch Creek Wayside at Mile 140.4 of the Steese Highway, and end at the Birch Creek Bridge, at Mile 147 of the Steese Highway. This 16 mile river trip occurs along private uplands, and is popular for motorized watercraft during hunting season.

Existing Facilities within the Steese National Conservation Area

Recreation within the Steese NCA is generally dispersed, and occurs primarily on the Pinnell Mountain Trail or Birch Creek, along numerous OHV routes, and on the Fryingpan Creek Road, thus there are only minimal facilities in the area. There are two shelter cabins located on the Pinnell Mountain Trail. **The Ptarmigan Creek Shelter** is located at approximately mile 10.1 mile from Eagle Summit in a saddle just below Pinnell Mountain. The **North Fork Shelter** is located at mile 17.8, approximately 9.5 miles from Twelvemile Summit. These small, unfurnished shelter cabins provide emergency shelter, away from strong wind and blowing rain or snow.

The Steese Highway bisects the NCA and provides multiple access points to both the North Unit and the South Unit for OHV access. The first access point is the unimproved **Faith Creek Road**

at Mile 73.8 of the Steese Highway, which provides access across State of Alaska lands to the North Unit and the Mount Prindle RNA. This unimproved trailhead is located on State of Alaska lands. The **Montana Creek Road** is located at Mile 80.1 of the Steese Highway, and provides access into Bachelor Creek and Preacher Creek in the North Unit via an unimproved State road. The **Fryingpan Creek Road** is located at Mile 101 of the Steese Highway and provides unimproved access into the South Unit and both the Great Unknown Creek and Fryingpan Creek areas. The **Porcupine Creek Road** at located at Mile 144.5 of the Steese Highway and provides unimproved access into the Loper Creek Area of the North Unit. The **Harrison Creek Road** provides access to the South Unit via the Harrison Creek – Portage Creek right-of-way. The **Circle Hot Springs** road provides access to the unimproved Portage Creek Road, which provides access to the South Unit and the Harrison Creek area.

There are two waysides providing access to the Pinnell Mountain Trail. The **Twelvemile Summit Wayside** is located at Mile 85.5 of the Steese Highway, and has limited facilities including information panels and a parking area. The **Eagle Summit Wayside** is located at Mile 107.1 of the Steese Highway and has a parking area, vault toilet, garbage collection facilities, information panels, and a 700 foot accessible trail with viewing deck and interpretive panels.

There are two improved waysides and one unimproved access point providing access to Beaver Creek National WR, which flows through the South Unit. The **Upper Birch Creek Wayside** is located at Mile 94 of the Steese Highway, and has a parking area, vault toilet, garbage collection facilities, information panels and interpretive panels. Two short trails access Birch Creek and the North Fork of Twelvemile Creek for fishing and float-boating. The **Lower Birch Creek Wayside** at Mile 140.4 of the Steese Highway has a parking area, vault toilet, garbage collection facilities, and information panels. A short trail accesses Birch Creek for fishing and offers egress for float-boaters. A 17(b) easement offers a change of travel area for motorized access to Birch Creek and also downriver for Yukon Flats NWR. There are no facilities located at this site.

The BLM's **Central Field Station Administrative Site** located in the town of Central offers housing for staff, storage for equipment and supplies and fuel for field work.

2.2.4.2.2. Forecast or Anticipated Demand for Use

As stated in section 1.2.4.1.2, the state's total population will most likely increase by 25 percent or more by 2030 (ADLWD 2007). In the event of this occurrence, BLM anticipates considerable growth in land use and recreational participation in the Steese NCA.

Current trends show a slight increase in use and demand in the Steese NCA. As the popularity of the adjacent White Mountains Cabins and Trails program increases, local populations increase, and the sale of OHVs (both summer and winter) increases, the demand for recreational opportunities and experiences in remote settings increases as well. The Steese NCA could experience increases in both summer and winter OHV use, especially during hunting seasons. Sustainable trails for summer use, both motorized and non-motorized, have been requested by the public. The demand for water-based recreation activities including floating, camping, and hunting could increase in the near future. As area rivers become increasingly utilized by motorized watercraft, the need for non-motorized, water-based recreational opportunities and experiences could increase as well.

As the State of Alaska makes land available for settlement, areas of the Steese NCA, which currently have very limited access, could experience increases in use by OHV or foot traffic. Encroachment into otherwise natural landscapes could impact recreational experiences in the area.

Overall, visitor use demand in the Steese NCA is increasing slightly. However, unless the Steese Highway is improved, and additional commercial facilities are made available in the towns of Circle and Central, overall use of the NCA will most likely remain relatively low. Recreational users utilize the NCA to participate in many different recreational activities, and to obtain specific experiences and benefits from these activities. Simply adding more trails and/or increasing development may or may not be the appropriate method of recreation management for the Steese NCA.

2.2.4.2.3. Key Features or Areas of High Potential

Pinnell Mountain National Recreation Trail

Management in the Steese NCA is focused on the protection of important recreation and resource values, which include outstanding scenic vistas of high mountain terrain, primitive areas with little evidence of man-made improvements, wildlife viewing opportunities, high ridge hiking along unmarked trails, unique landforms and geologic features, and hunting opportunities. There is the potential to develop a system of primitive cabins which would result in outstanding opportunities for winter use of remote backcountry.

The Pinnell Mountain Trail was constructed in 1970 for non-motorized use. It was designated as a National Recreation Trail in 1971. Facilities associated with the trail include Eagle Summit Wayside, which has a vault toilet, interpretive accessible loop trail with viewing deck, and informational display, and the Twelvemile Summit Wayside, which has an informational display. There are also two shelter cabins, the Ptarmigan Creek Shelter Cabin, located at Mile 10.1, and the North Fork Shelter Cabin, located at Mile 17.8. These cabins were constructed in 1974 by the Youth Conservation Corps and contain no significant amenities. Trail improvements began in the late 1990s and continue today with the installation of trail hardening materials such as planking or artificial tread and crushed aggregate filling.

Most of the recreational use along the Pinnell Mountain Trail occurs in the form of day use, typically with departures from Eagle Summit or Twelvemile Summit. Visitors usually hike the first 5 or last 5 miles of the trail for views to the north for the Midnight Sun. Besides these users, there are also an additional 100 visitors per year who hike or backpack the entire trail length of 27.3 miles, from Eagle Summit to Twelvemile Summit. Other activities include bird watching/wildlife viewing, wildflower viewing, upland bird hunting and big game hunting. The trail is also considered to be a popular destination for visitors from Germany.

Birch Creek National Wild River (WR)

On December 2, 1980, the ANILCA (P.L. 96-487) established the upper portion of Birch Creek, as a component of the National Wild and Scenic Rivers System. By doing so, Congress further ensured that it, and its immediate environments, would be protected for the benefit and enjoyment of present and future generations for many years to come. By classifying Birch Creek as "wild", Congress mandated that the Birch Creek National WR shall "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."

Located in Interior Alaska, Birch Creek is a waterway of significant natural qualities. The 126 mile Birch Creek National WR flows east through south unit of the Steese NCA before sweeping north to northeast through the Yukon Flats area to the Steese Highway. From the end of the Wild River segment, Birch Creek continues to flow nearly 175 miles to its confluence with the Yukon River.

Mount Prindle Research Natural Area

Mount Prindle was selected as a RNA because it contains outstanding examples of solifluction lobes; a diversity of alpine plant communities; and examples of both glaciated and unglaciated subarctic landforms. The area has high potential for public education and research use. It is also a popular rock-climbing area, due to its relatively close proximity to Fairbanks. The area supports Dall sheep and is popular during hunting season. The guiding management principle is the prevention of unnatural activities that modify ecological processes. Impacts from recreation activities in the area have not been identified, but there is some evidence OHV use within the primitive area surrounding the RNA.

Big Windy Hot Springs Research Natural Area

The principal feature encompassed by Big Windy RNA is an undeveloped hot spring system. Whereas many of the other hot springs in Alaska have been commercially developed, Big Windy Hot Springs is essentially undisturbed. There is occasional winter recreational use of the hot springs area, usually accessed by snowmachines. Impacts from recreation activities have not been identified. Some temporary modification of the creek to allow for soaking has probably occurred in the past.

Great Unknown and Fryingpan Creek Drainages

The Great Unknown and Fryingpan drainages, along with Harrison Creek, provide access into the south unit of the Steese NCA for hunters riding OHVs. Great Unknown Creek also serves as a winter overland move route to access mining claims on the south side of Birch Creek. The Fryingpan Creek Road was constructed to provide access to mining claims along Fryingpan Creek. This area has a high potential for quality OHV trails to be constructed, which would provide access to both caribou and moose habitat. These new trail opportunities would also provide access into an area suitable for primitive camping outside of the Birch Creek river corridor.

2.2.4.3. Upper Black River Subunit

The Upper Black River Subunit (Black River) encompasses approximately 2.6 million acres of BLM land, and is located approximately 100 miles northeast of Fairbanks, Alaska (Map 1.1). It is bounded on the north by the Arctic NWR, on the west by the Yukon Flats NWR and Yukon River, on the east by the Yukon Territory, Canada and on the south by the Yukon-Charley Rivers National Preserve. Most of the subunit is BLM-managed land. There is a small amount of State of Alaska, Native and private lands (Native Allotments) scattered throughout the area.

2.2.4.3.1. Current Level and Location of Use

The Black River Subunit is currently being managed as an Extensive Recreation Management Area (ERMA), and thus recreation management is limited to custodial actions only. Specifically, recreation in this subunit is currently being managed to provide visitor safety and reduce user conflict.

Public Land Visitors

The majority of visitors to this subunit are Alaska residents. Recreation use is generally dispersed along the rivers in the area including, but not limited to, the Salmon Fork of the Black River, the Black River, the Little Black River, the Wood River and the Kandik River.

General Use Figures

General recreation use figures for the Upper Black River Subunit have not been obtained, due to limited access and extreme remoteness of the area.

Recreation Activities

BLM-administered public lands in the Upper Black River Subunit offer a diversity of outdoor recreation opportunities including land, water and snow-based activities. Hunting is presumed to be the main activity in this subunit. In the past, BLM's Eastern Interior FO has issued Special Recreation Permits for guided hunting trips in the area. Other examples of recreation activities available in the area include hunting, fishing, trapping, gathering of edible plants and berries, OHV use, including snowmobiling, boating and river-based recreation, camping, hiking and backpacking, dog mushing, skiing, and skijouring. In addition, the presence of migratory and resident wildlife produces opportunities for photography and wildlife viewing.

Camping

Recreational camping within the subunit is dispersed in nature. There are no developed campgrounds. Due to the dispersed nature of camping in this subunit, camping use figures have not been obtained.

Existing Facilities within the Black River Area

There are no developed facilities in the Black River Subunit. There are, however, two known airstrips associated with private lands in the area. Evidence of past seismic exploration is also evident in the southern half of the area.

2.2.4.3.2. Forecast or Anticipated Demand for Use

As stated in section 1.2.4.1.2, the state's total population will most likely increase by 25 percent by 2030, possibly even more (ADLWD 2007). In the event of this occurrence, the Black River Subunit could experience a nominal increase in land use and recreational participation. Since accurate visitor use figures are not available, current recreational trends cannot be measured at this time.

Due to the extreme remoteness of the area, recreation opportunities will most likely remain primitive in nature. OHV use could increase slightly for hunting purposes, if the State of Alaska limits harvest numbers in other areas. The State of Alaska is also currently analyzing which waterways in the area are considered navigable. Such determinations, however, are not likely to increase motorized use, as there have been no major restrictions on BLM-managed rivers in the subunit to this point. A navigable determination on waterways could also have a slight impact on float-boating activities, possibly increasing recreational use in the area. However, the overall number of float-boaters in the area is currently presumed to be very low. If development of isolated parcels of private property occurs and access infrastructure is developed, recreation opportunities may increase.

2.2.4.3.3. Key Features or Areas of High Potential

No key features or areas of high potential have been identified at this time.

2.2.4.4. White Mountains National Recreation Area

The White Mountains NRA was established by Congress in 1980. Specific authorization for the White Mountain NRA comes from the ANILCA (P.L. 96-48). The specific language of this Act directs that the NRA shall be administered to provide for public outdoor recreational use and 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.

The White Mountains NRA encompasses approximately 1 million acres, and is located approximately 40 miles north of Fairbanks, Alaska. It is bordered on the south by the Fairbanks North Star Borough, to the west by State of Alaska lands, to the north by the Yukon Flats NWR, and to the east by the Steese NCA. Beaver Creek National Wild River is located within the NRA.

2.2.4.4.1. Current Level and Location of Use

Public Land Visitors

Although the majority of visitors to the White Mountains NRA are Alaska residents, an increasing number are from national and international locations. Drawn to the area by its array of recreational opportunities in an Alaskan wilderness setting, and for the longest available road-to-road river float in the nation, visitors outside of Alaska come to the region from all over the United States and abroad. Their use is most commonly reserved to the activities of camping, fishing, hiking and backpacking, float boating, photography, and wildlife viewing. Accordingly, the majority of non-resident visitor use occurs during the summer and fall months, from May through the end of September. The majority of White Mountains NRA users reside in the communities of Fairbanks and North Pole, though there has been an increase in the number of visitors from other parts of the state, especially during hunting season.

General Use Figures

Use estimates for the White Mountains are derived from cabin log book entries, cabin reservations, trailhead registers, campground permits, Special Recreation Permit post use reports, trail counters, and over flights, along with recreation staff and law enforcement observations. The NRA receive an estimated 35,000 visits per year.

Recreation Activities

BLM-managed public lands in the White Mountains offer a diversity of outdoor recreation opportunities including 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, dog mushing and skiing, ski-jouring, recreational mining, and OHV, including snowmobiling. In addition, the presence of migratory and resident wildlife produces abundant opportunities for hunting, trapping, photography, and wildlife viewing.

Winter Recreation

The White Mountains NRA provides a range of outdoor recreational opportunities in a variety of settings. Snowmobiling, dog mushing, skijouring and cross-country skiing, photography, wildlife viewing, hunting and sightseeing are common winter activities. At the heart of these recreation opportunities lies the cabins and trails program. Over 220 miles of marked and groomed winter trails provide access into remote portions of the NRA. Public use cabins are located at approximately 10-15 mile intervals to allow for comfortable, extended stays, and to provide a safer experience during winter.

Some areas within the White Mountains are difficult to access during the summer months due to poor soil conditions, such as muskeg and tussocks, as well as seasonal closures of the Beaver Creek river corridor and the White Mountains highlands to OHVs. The winter months provide opportunities to enjoy these same areas when adequate snow cover is present.

Cabin Use Figures

The White Mountains NRA contains 12 public use cabins and 2 trail shelters, which are used primarily during the winter season and are highly reflective of overall winter use. Visitor use numbers are generated from cabin reservations and cabin logbook data. Since the year 2000, an average of 818 nights annually are reserved for cabin use. The most utilized cabin in the system is Lee's Cabin, which averages over 130 rental nights per year. Other popular cabins, in decreasing order of use, are Fred Blixt, Eleazar's, Colorado Creek, and Moose Creek. Both the Lee's Cabin and Fred Blixt Cabin receive year round use while other cabins including Wolf Run, Windy Gap, and Cache Mountain receive virtually no summer use. A number of other cabins including Moose Creek, Eleazar's, Crowberry, Colorado Creek, Caribou Bluff, and Richard's receive very little non-winter use, with the exception of some use during hunting season. The Borealis Cabin gets some summer use by river floaters and hikers.

Peak use periods include weekends, holidays, and the month of March. Approximately 25% of the annual cabin use occurs in March. Cabin use has fluctuated to some extent throughout the past decade. Two cabins were lost during the 2004-2005 fire seasons, but were subsequently replaced. The loss of these cabins was reflected in an overall decline in cabin use until replacement occurred. The biggest single factor impacting cabin use appears to be directly related to the date at which adequate snowfall arrives. Normally, the earlier reasonable travel conditions become available, the greater the overall number of users becomes. In the past decade, adequate snowfall amounts have not occurred until January in three different years, essentially shortening the season by nearly 2 months.

Summer Recreation

The White Mountains provides numerous opportunities for outdoor recreation activities in the summer, from May through September. OHV use, hiking and backpacking, floating, camping, fishing, and hunting, berry picking, photography, sightseeing, and wildlife viewing are popular activities. The majority of summer recreation activities occur along the southern portion of the NRA, south of Beaver Creek. This is partly due to soil conditions, accessibility, and distance from the road system.

Camping

Recreational camping within the White Mountains can be divided into two primary categories, dispersed and developed. Dispersed camping occurs throughout the summer, but primarily occurs between the period of mid-August to late-September, in concurrence with the fall big game hunting seasons. Dispersed camping typically occurs along the trail system, along the Beaver Creek, and along the tailing piles in the Nome Creek Valley. The majority of dispersed camping that occurs along the tailings is with self-contained vehicles, such as motor homes, pick-ups with campers, and trailers, but some tent camping also occurs. A 14-day camping limit is enforced in the area.

For those campers seeking additional amenities, the White Mountains offers three developed campgrounds: Cripple Creek, Mount Prindle, and Ophir Creek. These campgrounds are described in further detail under Existing Facilities.

Camping Use Figures

Most camping use figures are tracked through information gathered from campground fee envelopes. The three campgrounds managed in this area are typically open between Memorial Day Weekend and September 15th. On occasion a late opening may occur due to spring snow conditions or road damage incurred during spring break-up, hindering access. The campgrounds also receive a minimal amount of untracked use before and after normal open/closed periods. Between 2000 and 2008 use levels have fluctuated. Specifically, between 2002 and 2006, use numbers were significantly reduced for a number of reasons, including: 2002, ice damage; 2003, high precipitation; 2004 and 2005, forest fire; and 2006, road construction. During a normal year, the Cripple Creek Campground receives approximately 1,000 visits, Mt. Prindle Campground receives approximately 1,000 visits, and Ophir Creek Campground receives approximately 700 visits. The duration of stay at the campgrounds is roughly 1.64 nights per group, and the average group size is 2.55 people per group.

Beaver Creek National Wild River

The longest road to road float in the nation, nearly 400 miles, occurs on the Beaver Creek National Wild River (WR). Most float boaters begin their trip at the Beaver Creek access point, located at the western end of the Nome Creek Road. Floaters launch their boats at a staging area and float approximately 2.5 miles along Nome Creek before reaching the confluence with Beaver Creek. The majority of floaters travel about 100 miles, to just below the confluence of Beaver Creek and Victoria Creek. Air taxis are often chartered for return trip to Nome Creek or Fairbanks. There are numerous gravel bars that are suitable for air taxis to land on, depending on water levels.

A longer trip on Beaver Creek can last 2 weeks or more and floaters travel nearly 300 miles through the White Mountains NRA and the Yukon Flats NWR. Once floaters reach the confluence with the Yukon River, most travel approximately 100 miles to next major take-out point, which

is the Yukon River Bridge, located approximately 100 miles north of Fairbanks on the Dalton Highway.

River Use Figures

River use data has been gathered through sign-in registration forms at major put-in sites; observed and recorded from the Beaver Creek Salmon weir site on the lower section of Beaver Creek and from other river inventory/patrol trips; and for three years, 2002-2004, from weekly over-flights to count baseline use numbers. An estimated 200-400 persons float, hike, or fly-into the river each season. This does not take into consideration any winter use. Recreational use is spread fairly evenly between June and August. Though a float party may see 0-3 other parties during their one week trip, it is more likely that a person would only experience one other group during the entirety of their river trip. During moose hunting season, river use spikes dramatically. Typical float groups this time of season could anticipate encountering three other groups on the river.

Hunting

Hunting is a major recreational activity within the White Mountains NRA. Usually occurring in the late summer and early fall, hunting has seen an increase in use from local, state, and out-of-state visitors, as well as military personnel. The largest number of users in the summer months occurs from September 1 to September 15 during moose hunting season. The number of users generally decreases with distance from the road system. Due to the close proximity of the White Mountains to the city of Fairbanks, increases in fuel prices, the construction of the Nome Creek Road in 1998, and the overall increasing popularity of the area, a noticeable increase in use has occurred over the past 10 years. The Nome Creek Valley receives the largest number of users in the NRA, partly due to ease of access and developed recreational facilities. An increase in cross-country travel has also occurred, where recreational hunters use OHVs for accessing remote areas and for retrieving game. Big game animals most commonly sought include moose, caribou, Dall sheep, black bears and grizzly bears.

Special Recreation Permits

There are currently seven active special recreation permits (SRP) in the White Mountains NRA. SRP activities and locations include; three day-hiking trips in the Wickersham Dome area, outfitted and guided trips on the Beaver Creek, skijor racing near Wickersham Dome, and winter military training exercises on the trail system, primarily near Wickersham Dome. Overall permitted use remains fairly low. SRPs related to guided hunting trips have not been issued during the past five years, but an application was received for bear hunting along Beaver Creek in the spring, 2009.

Existing Facilities within the White Mountains NRA

There are multiple developed points, which provide access into the White Mountains NRA from the Elliott and Steese highways. The Elliott Highway runs north/south along the west side of the NRA, while the Steese Highway lies along the southern boundary of the area.

The **Wickersham Dome Trailhead** at Elliott Highway Mile 28 provides direct access to the Wickersham Trail (motorized) and the Summit Trail (Non-motorized), and is the primary access point in the winter for users of the cabins and trails system. Lee's Cabin is the first cabin along the Wickersham Trail. This trailhead provides for both summer and winter access. Visitor

information kiosks are located at the beginning of each trail. There is also a vault toilet for public use, trash receptacles, a loading ramp, and parking for approximately 30 vehicles.

The BLM maintains a right-of-way (ROW) at **Elliott Highway Mile 23.5**for public access through private land. This trailhead was the original access point to the winter trail system, prior to the construction the Wickersham Dome Trailhead. The Alaska Department of Transportation (ADOT) maintains a pull-off on the west side of the highway. No other facilities exist at this site.

The **Colorado Creek Trailhead** is located at Elliott Highway Mile 57, and is primarily for winter access to the northwest portion of the White Mountains by snowmobile, dog mushing and skiing. Kiosks located at the trailhead provide information about the area. The Colorado Creek Trail travels about 12 miles through State land before entering the White Mountains NRA. The first cabin along the trail is the Colorado Creek Cabin. The trailhead is also used as a wayside for travelers heading north along the Dalton Highway. There is a vault toilet, trash receptacles, loading ramp and parking.

The **Fred Blixt Public Use Cabin** is located at Elliott Highway Mile 62.5. Although located within BLM's Central Yukon Field Office, management of this cabin was delegated to the Eastern Interior Field Office due to its proximity to the White Mountains, and because of its similarity to the established White Mountains cabins program.

The **McKay Creek Trailhead** at Steese Highway Mile 42 provides the first access point to the White Mountains from the Steese Highway. Parking for approximately 10 vehicles and a loading ramp is provided for access to the McKay Creek Trail. The first cabin encountered along the McKay Creek Trail is the Cache Mountain Cabin, located approximately 20 miles from the trailhead. A visitor information panel at the trailhead, describes the cabin and trail system, and provides general information.

The **Davidson Ditch Wayside** is located at Steese Highway Mile 57. Restoration of the Davidson Ditch siphon pipe supports was completed in 2007 to maintain the structure and appearance of the siphon. Interpretive displays are in place to describe the operation of the historic Davidson Ditch.

The **U.S. Creek Road** access and wayside is located at Steese Highway Mile 57. The wayside provides parking for approximately 30 vehicles, has a double vault toilet, trash receptacles, loading ramp, and information panels. This wayside is used as a parking area for winter users of the White Mountains and by travelers of the Steese Highway, both summer and winter. The U.S. Creek Road is also a popular summer access point for vehicles traveling into the Nome Creek valley, and provides access to the Beaver Creek. The road is maintained by the State of Alaska and extends approximately 7 miles until it intersects with BLM's Nome Creek Road, near the Nome Creek Bridge.

The Nome Creek valley was intensively mined in the early 1900s. Consequently, the U.S. Creek Road was established to provide reliable access to the site. In 1996 the BLM, in cooperation with the State of Alaska through the Federal Highway Program, began construction of the **Nome Creek Road** and associated facilities. From the intersection with the U.S. Creek Road, the Nome Creek Road travels northeast approximately 4.5 miles to the Mt. Prindle Campground, and southwest approximately. 12.5 miles to the Ophir Creek Campground, which is also the primary access point for Beaver Creek.

Trail access along the Nome Creek Road includes a parking area and trail to Moose Creek Ridge, parking and visitor information panels at the Quartz Creek Trailhead, interpretive displays, a

parking area and information panels for the non-motorized Table Top Mountain hiking trail, and trail access for the Bear Creek Trail.

There are two campgrounds within the White Mountains NRA. The **Mt. Prindle campground** has 13 campsites and a parking area for visitors that hike the undeveloped Mt. Prindle uplands. The **Ophir Creek Campground** has 19 campsites and is adjacent to Nome Creek and about ¼ mile east of the Beaver Creek National WR access. The campgrounds are open year round, but most visitor use occurs during the summer/fall months. The Nome Creek Road is not maintained in the winter; however it remains a popular winter recreation route and provides an alternate access to Richard's Cabin, located along the Bear Creek trail.

The **Beaver Creek National WR access** provides parking for approximately 20 vehicles and information panels describing floating opportunities on Beaver Creek.

The **Nome Creek Administrative Site** is located approximately 1 mile east of Ophir Creek Campground. The administrative site is used primarily for summer seasonal housing, storage of field gear and supplies, and fuel storage for field/helicopter work. Seasonal BLM employees use this site as a base camp to perform maintenance and janitorial services to facilities in the area, and to maintain a presence in the valley.

Cripple Creek Campground is located at Steese Highway Mile 60. Though not directly connected to the White Mountains NRA, this campground provides a starting point for access to the Nome Creek valley and supports travelers along the Steese Highway. It has 18 campsites, 4 outhouses, 1 well, and day-use areas near the Chatanika River. There is also a 1/2 mile long fishing trail, to provide easy access to the river from the campground. Included along this trail are foot bridges and numerous interpretive panels describing the river ecosystem.

White Mountains NRA Cabins and Trails Program

The Borealis-LeFevre Cabin was the first public use cabin built in the White Mountains. The cabin was completed in 1969 by the Borealis Kiwanis Club, in association with BLM. The original cabin no longer exists, but the BLM constructed a new log cabin in 1996, approximately 100 feet from the original site. The first cabin built by the BLM was Windy Gap Cabin in 1985. There are currently 12 public use cabins and 2 trail shelters located within the White Mountains NRA, and the Fred Blixt Cabin, located just outside the NRA. The cabins are located 10 to 15 miles apart. There are over 220 miles of trails in the White Mountains that connect from the highway system to the public use cabins. The trails are primarily used in the winter though some are accessible in summer to hikers and OHV users whose machines weigh less than 1,500 pounds gross vehicle weight rating.

2.2.4.4.2. Forecast or Anticipated Demand for Use

As stated in section 1.2.4.1.2, the state's total population will most likely increase by 25 percent, possibly more, by 2030, (ADLWD 2007). In the event of this occurrence, the BLM would anticipate considerable growth in land use and recreational participation in the White Mountains NRA.

Current trends show increasing use and demand in the White Mountains NRA. Specifically, the area experienced a 20% use increase between 2000 and 2008. As the popularity of the Cabins and Trails program increases, local population increases, and the sale of OHVs (both summer and winter) increases, the demand for recreational opportunities and experiences in places

like the White Mountains increases as well, especially given its close proximity to Fairbanks. Increased use trends are currently being observed for OHV-related recreation, especially in the Nome Creek valley.

Winter use numbers vary depending on weather conditions, but the demand is present, based on interactions with members of the public and requests for cabin rentalsat the BLM District Office in Fairbanks. Especially high demand occur during holidays and weekends. There also appears to be a demand for additional cabins over additional trails by winter users, though some non-motorized users have requested additional single use winter trails. Contact with winter trail users has indicated the desire for additional cabins close to the highway system, and an additional cabin over the Cache Mountain. Loop Trail.

Additional trails for summer use, both motorized and non-motorized, have been requested by the public. OHV users have requested additional summer trails and have expressed a desire to obtain additional access further into the White Mountains from the road system. There are also recreational users who desire to have no additional trails constructed so that the current character of the area can be maintained.

Cabin use appears to have reached a maximum threshold level, based on the total possible number of usable days. As new cabins have been added to the system, the use of other cabins has not decreased, and thus it appears that there is likely unmet demand for more cabins.

Overall, visitor use demand in the White Mountains NRA is increasing. Recreational users utilize the NRA to participate in many different recreational activities, and to obtain specific experiences and benefits from these activities. Simply adding more trails and cabins may or may not be the appropriate method of recreation management for the area. Therefore, the Eastern Interior RMP will need to analyze a range of alternatives to determine appropriate levels of recreational use and development in the area.

2.2.4.4.3. Key Features or Areas of High Potential

Cabin and Trails program

The Cabin and Trails program within the White Mountains NRA began with the construction of the Borealis - LeFevre Cabin in 1969 and the Wickersham Creek Trail Shelter in 1972. Both cabins were constructed along the old Fairbanks/Beaver Trail, also called the winter trail and later called the Wickersham Creek Trail. In 1985, the BLM constructed the Windy Gap cabin. From 1985 to the present, the BLM has constructed 12 public use cabins and 2 emergency trail shelters in the White Mountains. The cabin and trails program has become enormously popular with the recreating public. Though the majority of users are from the surrounding area, there is a noticeable increase in use from throughout the state and even internationally. Use information comes from field observations, log book entries at each of the cabins, trailhead logs and from cabin rentals.

Trail improvements began in the late 1980s and continues today. Trails have been widened and confidence/signage markers have been installed. These improvements have contributed to safer and easier to follow route system. The cabins have also provided for a safer experience, the ability to travel further into the recreation area, and allows the recreating public their own piece of the "Alaska Experience."

Under the Federal Lands Recreation Enhancement Act, all fees collected from the program contribute to maintenance and improvements of the cabins, trails and associated facilities. Two of the cabins added to the program were constructed by utilizing these user fees: Eleazar's Cabin and Crowberry Cabin.

Nome Creek Valley

The Nome Creek valley has large potential for increased recreational use, particularly during the summer by both motorized and non-motorized users. It is the main summer access to the White Mountains NRA. The majority of summer use facilities within the White Mountains are located in the Nome Creek valley. Seventeen miles of road are available for travel into various terrain, from sub-alpine to lowland tundra and black spruce forests, allowing for a variety of uses and experiences in a variety of ecosystems. There are approximately eight miles of mined tailings that are mostly accessible to OHVs, including four wheel drive vehicles and all terrain vehicles (ATVs). This area provides a sense of history and discovery of early Alaska mining activity to the visiting public. Traditionally OHV use primarily occurred during hunting season but a new trend seems to be emerging: family related OHV use during summer weekends, primarily confined to the tailings area along Nome Creek.

The Quartz Creek Trail begins in the Nome Creek Valley near the Mt. Prindle Campground, and has become a popular OHV trail destination throughout the summer and fall months, especially during hunting season. For the past five years, the BLM has been working toward making the Quartz Creek trail a sustainable, multiple use trail.

The Table Top hiking (non-motorized) trail is a three mile loop that starts at the Nome Creek Road and travels 1.5 miles to Table Top Mountain. This trail is nearing completion, and offers scenic vistas of the White Mountains to the north, the Nome Creek valley to the south, and views of the Alaska Range on a clear day.

Beaver Creek National Wild River

The upper portion of Beaver Creek, was established as a component of the National Wild and Scenic Rivers System under ANILCA on December 2, 1980. Doing so would further ensure that it, and its immediate environments, would be protected for the benefit and enjoyment of present and future generations for many years to come. By classifying Beaver Creek as "wild," Congress mandated that Beaver Creek National Wild River shall "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."

Located in the interior of Alaska, Beaver Creek is a waterway of significant natural qualities. It flows west through the southern portion of the White Mountains NRA before sweeping to the northeast around the tip of the White Mountains, known as Big Bend. The designated wild river segment flows another 90 miles into the Yukon Flats NWR. From the end of the wild river segment, Beaver Creek continues nearly 200 miles to its confluence with the Yukon River.

The development of the Nome Creek Road during the late 1990s significantly improved the access to Beaver Creek. Recreational use on the river has nearly tripled since the road was built. Though the level of river use is cyclic, it appears to have stabilized over the last several years. This stabilization or threshold limit can mostly be attributed to limited egress, requiring either

an increased amount of time to float the entire distance to the Yukon River Bridge or limitations with air taxi availability for post-trip departures out of the area.

2.2.5. Travel Management

Travel and transportation are an integral part of virtually every activity that occurs on BLM-manged public lands: recreation, wildlife management, commodity resource management, rights-of-way (ROW) to private inholdings, maintenance of other permitted sites (i.e. communications towers, etc.) and management and monitoring of public lands. This section addresses public travel and access.

Comprehensive trails and travel management is the proactive management of public access, natural resources, and regulatory needs to ensure that all aspects of road and trail system planning and management are considered. This includes resource management, road and trail design, maintenance, and recreation and non-recreational uses of the roads and trails. Travel activities in this context incorporates access needs and the effects of all forms of travel, both motorized and non-motorized. Comprehensive trails and travel planning means providing clear specific direction on the proper levels of land and water access for all modes of travel. Travel management objectives serve as the foundation for appropriate travel and access prescriptions.

Regulation

43 CFR 8342.1 designation criteria state that "The authorized officer shall designate all public lands as either open, limited, or closed to off-road vehicles. All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands."

National Guidance

On a national level, and in response to increasing demand for trails recreation on public lands, the BLM developed first an OHV strategy and then a mountain bike strategy. A Non-motorized/Non-mechanized strategy is also planned. These strategies emphasize that the BLM should be proactive in seeking travel management solutions that conserve natural resources while providing for ample recreation opportunities (BLM 2004c).

The BLM released the current version of the Land Use Planning Handbook (H-1601-1) in March 2005. Guidance for Comprehensive Trails and Travel Management, including the delineation of travel management areas and the designation of OHV management areas in the land use planning process was incorporated into the Resource Uses Section of Appendix C (Section II D). This guidance included direction set forth in BLM's IM Number 2004-005, Clarification of OHV Designations and Travel Management in the BLM Land Use Planning Process, which emphasized policy and provided clarification and additional guidance for travel management decisions. In addition, WO IM 2008-014, Clarification of Guidance and Integration of Comprehensive Travel and Transportation Management Planning into the Land Use Planning, provided further direction.

Modes of Travel

Visitors to public lands within the Eastern Interior planning area use roads and trails for a variety of recreational activities involving various modes of travel.

Nonmechanized Travel:Nonmechanized modes of travel include cross-country skiing, dog sledding, snowshoeing, horseback riding, hiking, and boating.

Mechanized Travel:Mechanized vehicles predominantly involve the use of mountain bikes.

Motorized Travel:Motorized travel includes the use of standard passenger vehicles on maintained roads and OHVs on primitive roads and trails. OHVs include motorcycles, ATVs, jeeps, specialized 4x4 trucks, snowmobiles, and motor boats. The type and amount of use and the location of roads and trails influence physical, social, and administrative recreation settings and the overall quality of the recreation experience.

Travel Designations

The BLM designates areas within the lands it manages as open, limited to existing roads and trails, limited to designated roads and trails, and closed to OHV use.

Travel designations are defined as:

- **Open:**Areas designated as open are available for OHV travel without restriction, based on an analysis that determines there are "no compelling resource protection needs, user conflicts, or public safety issues to warrant limiting cross-country travel;"
- **Limited:**Areas limited to either designated or existing roads and trails restrict OHV travel in order to protect resources. Restrictions may include the number or types of vehicles, time or season of use, use of existing roads and trails only, use of designated roads or trails, or licensed use only. The BLM may also impose other restrictions as necessary to protect resources;
- **Closed:**OHV travel is not allowed in areas designated as closed. Areas are closed in order to protect resources, ensure visitor safety, or reduce user conflicts; and
- **Temporary:**Areas may be temporarily closed to OHV use in order to allow resources to recover or for other purposes.

2.2.5.1. Fortymile Subunit

2.2.5.1.1. Current Level and Location of Use

As an integral part of virtually every activity that occurs in the Fortymile area, travel and transportation occur for a variety of reasons including recreational access to public lands, access to resources such as minerals, oil, and gas, access to private inholdings, and access to traditional subsistence areas.

Visitors to the Fortymile area utilize roads and trails as a means of accomplishing a variety of 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 vehicle touring, including Off-Highway Vehicle (OHV) use.

Since motorized and non-mechanized modes of transportation account for the majority of annual visitation to the Fortymile Resource Area, the following sections provide more detailed information on these activities and their current levels and locations of use.

Motorized Travel

Motorized travel in the Fortymile area can be divided into two primary categories including self-contained vehicles and OHVs. Most numerous are the Taylor Highway travelers, who arrive to the area by means of self-contained vehicles such as passenger vehicles, motor homes, and vehicles pulling trailers. Drawn to the area by its vast array of recreational opportunities including camping, fishing, hiking and backpacking, photography, and wildlife viewing, travelers typically arrive during the summer and early fall months, from May through the end of September. It is during this time that visitor use is greatest at each of the BLM-managed waysides and campgrounds that dot the Taylor Highway.

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 self-contained 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 often unsustainable and can cause significant resource damage. As is the case in much of Alaska, however, the majority of existing routes are the result of user-created trails that either follow historic non-recreational routes (such as, mining or administrative access) or were created by OHV users repeatedly driving cross-country. Accordingly, many of the existing routes within the Fortymile area may not be sustainable from a recreation/resource management perspective.

Nonmechanized Travel

For those travelers seeking nonmechanized forms of transportation, the Fortymile area provides many opportunities in a variety of scenic settings. Float boating activities including rafting, kayaking, and canoeing, may all be enjoyed within the Fortymile River Corridor. Hiking and snowshoeing, although less prevalent to the area, may also be enjoyed within the confines of the river corridor.

For boaters contemplating a trip down the Fortymile River, many options are available. The longest trip may begin with an air taxi ride to the Joseph Airstrip in the Middle Fork drainage, followed by an 8–12 day float trip to Eagle. For boaters in search of a shorter float, 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.

2.2.5.1.2. Forecast or Anticipated Demand for Use

With increased pressures from growing populations and advances in recreational vehicle technology, travel demands in the Fortymile area 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 area, 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. Mechanisms 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.

In addition to anticipated increases in OHV use, the intensification of nonmechanized modes of travel including recreational boating and hiking, are also predicted, as demonstrated by recent trends surrounding these activities. Compared to only a few years ago, when gasoline prices were significantly lower than they are today, 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 area is increasing. 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 recreation management for the area. Therefore, the Eastern Interior RMP will need to analyze a range of alternatives to determine appropriate levels of recreational use and development in the area.

2.2.5.1.3. Key Features or Areas of High Potential

Mosquito Fork Dredge Overlook Trail

Located at Mile 68 of the Taylor Highway, approximately one mile east of the community of Chicken, the Mosquito Fork Dredge Overlook Trail supports nonmechanized travel within the river corridor. The 1.5 mile trail provides travelers with an opportunity to pull off the highway to rest, hike, and learn more about the local area. Parking is available on the west side of the road, adjacent to the trailhead.

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 Mosquito Fork Dredge remains a significant icon of Alaskan history that helped shaped a new technological phase in mining operations.

Chicken Ridge Trail

Located at Mile 65 of the Taylor Highway, approximately one mile southeast of 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 during the months of mid-August through late-September, in concurrence with the 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. Because the trail occurs on State and ANCSA selected lands, the BLM bears no management responsibilities regarding travel related activities or access to this route.

Fortymile National Wild and Scenic River

Located in Interior Alaska along the United States-Canada Border, the Fortymile River National Wild and Scenic River (NWSR) is a waterway of significant historic, cultural, and natural qualities. It was the scene of the first gold rush in the interior of Alaska, and remnants of the mining activity of those days continue to dot the landscape. Glimpses of these remnants may still be seen today, including gold-mining dredges, turn-of-the-century trapper cabins and abandoned townsites. It was for these reasons, among others, that on December 2, 1980, the ANILCA (P.L. 96-487) established the Fortymile, and certain tributaries, as a component of the National Wild and Scenic Rivers System. Doing so would further ensure that they, and their immediate

environments, would be protected for the benefit and enjoyment of present and future generations for many years to come.

2.2.5.2. Steese National Conservation Area

2.2.5.2.1. Current Level and Location of Use

As an integral part of many activities that occur in the Steese NCA, travel and transportation occur for a variety of reasons. Examples of travel activities commonly conducted in the area include hiking and recreational boating such as rafting, kayaking, canoeing and OHV use.

Access to the Steese NCA by automobile and recreational vehicle (motorhomes, travel trailers, etc.) is primarily limited to trailheads along the Steese Highway. Trailheads normally do not reach capacity, even on busy weekends and holidays. Much of the travel in these areas occurs during the hunting season of August and September when the Upper and Lower Birch Creek Waysides may approach capacity. Eagle Summit Wayside can be crowded around the summer solstice.

There are unrestricted methods of travel allowed in the Steese NCA. Foot travel is allowed throughout the area. The Pinnell Mountain National Recreation Trail (Pinnell Mountain Trail) is the only developed hiking trail in the NCA. Other short trails exist in association with waysides. Helicopter access is unrestricted, as is equestrian travel and non-motorized bicycle travel. There are no developed equestrian (horse) or mountain bike trails in the area. Use levels for these activities are minimal.

While OHV related activities occur throughout the year, most OHV use occurs in the summer months with a significant spike in use just before and during the fall hunting seasons (August and September). OHV use occurs in both the North and the South units. Use of the North Unit is related to access across State of Alaska lands, via the Bachelor Creek Road, and the Faith Creek Road, which provide access to OHV routes in the Preacher Creek drainage. Use of the South Unit occurs in the Great Unknown Creek, Fryingpan Creek, and Harrison Creek drainages. This is due largely to easy access on State of Alaska roads, natural topographical challenges, existing OHV designations, and management for other types of recreational access.

Many of the existing routes in the Steese NCA are user created and are generally not considered to be sustainable from a natural resource and/or recreation management perspective. Also, due to the features of topography, soils, vegetation and permafrost in the area, user created routes tend to grow significantly in width as riders avoid low wet spots that have formed, or chose parallel paths that have been less impacted and thus may be less challenging or muddy. Cross-country travel does occur in many areas, thus expanding the system of user created routes. An inventory of these routes was completed in 2001 using Global Positioning System. Condition surveys have been conducted on a small number of these routes.

Features of topography, soils, vegetation, and permafrost make non-road travel in the Steese NCA particularly difficult during the non-winter months. These factors are ameliorated during the winter months when the surfaces (both land and water) freeze and are covered by snow. Easier travel and the ability to cross the Birch Creek National Wild River corridor by motorized vehicles in the winter opens up much of the area to wintertime travel and exploration.

The only maintained trail for winter use is the Yukon Quest trail, but this trail is not set until late January or early February. Some winter travel on BLM-managed lands occurs around the

community of Central for recreational snowmobile use, dog-mushing, cross-country skiing and recreational trapping. Main access points in the winter months are from State of Alaska lands along the Chena Hot Springs Road, from the Twelvemile Summit Wayside at Mile 87 of the Steese Highway, and from the community of Central.

The Birch Creek National Wild River provides visitors a unique opportunity to travel through the Steese NCA by boat. Floaters can begin their trip at the Upper Birch Creek Wayside at Mile 94 of the Steese Highway and float 110 river miles to the Lower Birch Creek Wayside at Mile 140.4 of the Steese Highway. It usually takes floaters approximately 7 days to reach this takeout point. A shorter trip on Birch Creek can last one or two days, and begins at the Lower Birch Creek Wayside and ends at the Birch Creek Bridge at Mile 147 of the Steese Highway. This 16 mile river trip occurs along private uplands and is popular for motorized watercraft use during hunting season.

Most float boats launched at from the Upper Birch Creek Wayside do not have motors; however, motorized watercraft often travel the lower segment of Birch Creek from the Birch Creek Bridge at Mile 147 of the Steese Highway and travel upstream approximately 30 miles.

Very limited winter access via aircraft occurs along the Birch Creek. There are no designated landing strips or airports within the Steese NCA. There are a multiple unimproved/unmaintained landing strips utilized by fixed-wing aircraft associated with other permitted activities scattered throughout the Steese NCA. State of Alaska roads provide access to many areas within the NCA, but these roads receive limited maintenance during the summer, are not maintained during the winter, and are best suited to OHV or four-wheel drive travel. Winter overland access for large equipment also occurs, under permit.

2.2.5.2.2. Forecast or Anticipated Demand for Use

Trends and field observations show increasing use and demand for travel related activities and access in the Steese NCA. Popularity of the NCA roads and trails, local population numbers, and OHV (including snowmobile) ownership are all currently on the rise. Increasing demand will likely be amplified by continued high gasoline prices; visitors may choose to look for locations closer to home. The NCA is located within two hours of Fairbanks. Interactions by BLM staff with trail users indicate a demand for increased access to trails.

2.2.5.2.3. Key Features or Areas of High Potential

It is likely that the Great Unknown and Harrison Creek drainages have the largest potential for increased travel related use (motorized) in the South Unit during summer months. The Preacher Creek Drainage likely possesses the largest potential for travel related use in the North Unit.

2.2.5.3. Upper Black River Subunit

2.2.5.3.1. Current Level and Location of Use

Travel in the Upper Black River Subunit is currently unrestricted. Due to the features of topography, soils, vegetation and permafrost, as well as the remoteness of the area, there are few defined trails of any kind. Travel is generally conducted by motorized watercraft along rivers during the summer and by snowmobile in the winter. There are a few ANCSA 17(b) easements in this subunit which provide access to public land across Native corporation land.

There are two known landing strips, located on private lands that were used in the past to support oil and gas exploration activities. From these landing strips, cross-country routes radiate out in straight lines. These lines are visible from the air and are probably the result of past seismic exploration. These could now be used as snowmobile travel routes. One of these landing strips has become overgrown but has a "cub strip" beside it where it is believed small aircraft access the area. Fixed-wing and helicopter access is unrestricted and small fixed-wing aircraft have been known to use ridgelines and gravel bars to access backcountry areas. OHV use and foot travel are also unrestricted. There is no known horse or bicycle travel in the area.

2.2.5.3.2. Forecast or Anticipated Demand for Use

With advances in recreational vehicle technology, the Black River Subunit could experience an increased level of land use and activity, particularly participation related to OHV use and access for subsistence use. However, this increase will most likely be limited due to the features of topography, soils, vegetation, permafrost, lack of any defined trails, lack of road access, and overall remoteness of the area. The nearest road access is the end of the Steese Highway at Circle, which is on the other side of the Yukon River from the subunit.

In addition to possible increases in OHV use related to subsistence, the intensification of nonmechanized modes of travel including recreational boating and hiking could also occur. Compared to only a few years ago, when gasoline prices were significantly lower than they are today, boating and hiking have become increasingly prominent forms of recreational travel in other areas of Alaska. These same trends could occur in this area, but are unlikely for the reasons previously listed. Subsistence use will most likely remain the most prominent activity related to travel management in the area.

2.2.5.3.3. Key Features or Areas of High Potential

Due to the features of topography, soils, vegetation, permafrost, and remoteness of the area, key features and areas of high potential are minimal. Travel is generally by motorized watercraft along rivers during the summer and by snowmobile travel in the winter. Therefore, waterways and seismic lines are conceivably the areas that could be considered to be key or to possess high potential.

2.2.5.4. White Mountains National Recreation Area

2.2.5.4.1. 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. Examples of travel activities commonly conducted in the resource area include hiking and recreational boating such as rafting, kayaking, and canoeing. In addition, the many trails provide abundant opportunities for OHV use.

Access to the White Mountains NRA by automobile and recreational vehicle (motorhomes, travel trailers, etc.) is limited to the Nome Creek valley, trailheads along the Steese and Elliot highways, and to the Cripple Creek Campground. Automobiles can also access the Fred Blixt cabin (Mile 62 Elliot Highway), via a short road that is maintained year-round by the BLM. Campgrounds and trailheads normally do not reach capacity even on busy weekends and holidays. Much of the travel in the White Mountains occurs during the fall hunting seasons (August and 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 assess in the White Mountains is used to stage and support OHV activities (snowmobiling or travel by ATV).

The use of fixed wing and rotary aircraft is generally unrestricted in the NRA, and multiple unimproved airstrips may exist. Recreational use of horses and mountain bikes also occurs and use of these modes of transportation is generally unrestricted.

While OHV related activities occur throughout the year, most OHV use occurs in the summer months with a significant spike in use just before and during the fall hunting seasons. Most of the OHV use occurs in the southern and western portions of the White Mountains NRA. This is due to natural topographical challenges, existing OHV designations, and management for other types of recreational use. Existing roads and trails are the predominant routes for OHVs. However, many of the existing routes are user created trails and may not be sustainable from a natural resource and/or recreation management perspective. Also, due to the features of topography, soils, vegetation and permafrost in the area, OHV trails, especially user created routes, tend to grow in width as riders avoid low wet spots that have formed or chose parallel paths that have been less impacted and thus may be less challenging or muddy. While existing trails and roads are the predominate routes used by OHVs, cross-country travel does occur in many areas, thus expanding the system of user created routes. Much of the OHV use in the White Mountains occurs in the Nome Creek valley on roads, tailings piles, and on trails (both established and new user created) that originate in the valley.

Many miles of user-created OHV trail exist in the White Mountains NRA; some are known by BLM and have been inventoried using Global Positioning System while others are unknown and remain uninventoried. Management of such user created trails will be an ongoing challenge.

Features of topography, soils, vegetation, and permafrost make non-road travel in the White Mountains particularly difficult during the non-winter months. These factors are ameliorated during the winter months when the surfaces (both land and water) freeze and are covered by snow. Thus, a majority of the non-road travel occurs in the wintertime. Easier travel and the ability to cross the Beaver Creek National Wild River corridor by motorized vehicle in the winter, opens up most of the White Mountains NRA to wintertime travel and exploration. During the winter months, snowmobiles become the primary mode of motorized travel, and dog-mushing and cross-country skiing become the predominant non-motorized travel modes. A majority of the winter travel access in the White Mountains centers around the established, maintained winter cabins and trails system. Those sections of trail in near the road system tend to get the most 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 of the public use cabins and motorized access predominates. However, non-motorized use and backcountry winter camping is not uncommon anywhere along the trail system. Main access points in the winter months are Wickersham Dome and Colorado Creek on the Elliot Highway, and McKay Creek Trailhead and U.S. Creek Road on the Steese Highway.

Beaver Creek National Wild River

The Beaver Creek National Wild River provides visitors a unique opportunity to travel through the White Mountains NRA by boat. Floaters begin their trip at a staging area just past the

Ophir Creek Campground, which is located on the Nome Creek Road. From there, visitors can float Nome Creek for approximately 2½ miles to the confluence with Beaver Creek. From this confluence, visitors can float for approximately 107 miles to a common takeout point, located just past Victoria Creek.

Victoria Creek is a common location for air taxi services to pick up floaters, as there is no road access to Beaver Creek past the put-in at Nome Creek. Floaters can also choose to continue down Beaver Creek, out of the White Mountains NRA to the Yukon River, then another 84 miles on the Yukon River, eventually taking out at the Yukon River Bridge on the Dalton Highway. The trip to the Dalton Highway can require an additional 2 weeks or more of float time. Boaters continuing on to the Yukon River Bridge usually 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.

Most boats launch on Nome Creek with no motors. However, boats with motors up to 15 horsepower are allowed to launch in Nome Creek. There are 4 private inholdings on Beaver Creek; Boats with motors larger than 15 horsepower may be encountered at these inholdings, but were most likely brought upstream to their current location and are generally used for localized river travel. Some float-plane use is also associated with these private inholdings.

Floaters usually return via small aircraft, to Fairbanks or to an area near the BLM administrative site, which is located just upstream from the put-in where small aircraft landings are possible. During periods of low water levels, there are several other gravel bar locations where small aircraft landings are possible providing several take-out options for Beaver Creek floaters. During periods of extremely low water levels, many gravel bars may become available for small aircraft landings. However, these gravel bars tend to change rapidly, might be available some years and not others, and are used at the discretion of the air taxi service providers and private plane owners.

Some gravel bars are used by planes to access Beaver Creek and other areas in the White Mountains NRA for activities not related to on-river travel. For example, some visitors fly in to fish, hunt, camp and recreate from gravel bar landing sites.

2.2.5.4.2. 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. Popularity of the White Mountains roads and trails, local population numbers, and OHV (including snowmobile) ownership are all currently on the rise. Numbers and demand for use by automobiles, recreational vehicles, and OHVs seem to be on the rise in the White Mountains, particularly in the Nome Creek valley. There is increasing OHV use and demand for trails (both established and new user created) that originate in the valley. Increasing demand will likely be amplified by continued high gasoline prices; visitors may choose to look for locations to recreate closer to home. The White Mountains is located within one hour of Fairbanks. Interactions of BLM staff with trail users indicate demand for more summer use OHV trails, hiking trails, and non-motorized winter trails.

Another consideration related to the future of travel management is the proposed land exchange between Yukon Flats NWR and Doyon, Limited. This proposal is currently in the environmental impact analysis stage, but includes a potential overland access route through the White Mountains to lands to be acquired by Doyon, Limited. Such access would have a major impact on the character settings of the White Mountains NRA and BLM's travel management program.

2.2.5.4.3. Key Features or Areas of High Potential

Nome Creek valley is the main access point for summer access in the White Mountains NRA. It contains the only road suitable for automobile travel in the NRA. Therefore, this area has the largest potential for increased travel related use during the summer months, by both motorized and non-motorized users. However, there is also high potential for additional non-motorized access, such as hiking trails, in the Wickersham Dome area.

2.2.6. Land Tenure and Realty

The primary objective of the Lands and Realty program is to provide the public with use of the land it needs through rights-of-way, land use permits, leases, and sales. The secondary objective is to provide support to other programs to protect and enhance the resources. Overlaying these first two objectives is the need to support the Alaska Land Transfer Acceleration process, which involves the survey and conveyance of lands to the State of Alaska, Native corporations, and Native allottees.

Land actions constitute resource allocations, and, as such, are made through a variety of means but generally fall into five broad categories: use authorizations (permits, leases, and rights-of-way), disposal actions (sales), acquisitions, exchanges, and withdrawals. Each proposal or application for a lands action is considered on a case-by-case basis and is either authorized or rejected.

2.2.6.1. Land Ownership Adjustments

Major landowners within the planning area include Doyon, Limited, a native regional corporation, various native village corporations, the State of Alaska, the Federal government, and private individuals and businesses. Federal ownership includes Yukon Charley Rivers National Preserve, Tetlin and Yukon Flats NWRs, and public domain lands managed by the BLM (Map 1.2).

Under the Statehood Act, the State of Alaska is entitled to receive 104 million acres of Federal land. The Alaska Native Claims Settlement Act (ANCSA) requires the transfer of 45 million acres of public land to Alaska Native corporations. Approximately 1.4 million acres and 1.8 million acres of BLM-managed land in the planning area are State-selected and Native-selected respectively (Table 1.2). The final conveyance priority list for Native-selections was submitted to BLM on June 9, 2008 and the priorities for State-selections were submitted on December 10, 2008. At the present time Doyon has over-selected by more than one million acres and the State has over-selected 25% on a statewide basis. Therefore, 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 the BLM anticipates that these lands will remain under BLM ownership.

The Alaska Native Allotment Act of 1906 (repealed with a savings provision by ANCSA) and the Alaska Native Vietnam Veterans Act of 1998 (P.L. 105-276) allow for the transfer of up to 160 acres of non-mineral lands to eligible Alaska Natives if certain requirements were met as of August 31, 1971. These are referred to as native allotments.

Conveyances to the State of Alaska, Native corporations, and individuals (Native allotments) are ongoing. Unselected public lands in the planning area are currently retained for public use. Any selected lands which remain after various entitlements are fulfilled, will also be retained for

public use. However, tenure adjustments, including sale, acquisition, 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. Although no exchanges, sales, or R&PP disposals have been made in recent years, there are two existing R&PP leases. The Eastern Interior FO is currently trying to acquire one private inholding within the White Mountains NRA. No other acquisitions are being pursued at this time.

2.2.6.2. Current Level and Location of Use

2.2.6.2.1. Access

Most of the public land within the planning area is located in rural and remote areas away from developed communities and settlements. Although there are a few points of access from the Elliott, Steese, Alaska, and Taylor highways, very little public land under BLM management is accessible by road. The primary means of access to these lands is by foot, boat, off-highway vehicle, snowmobile, or aircraft.

Access to public lands from most villages is provided by sec. 17(b) easements reserved on or across lands conveyed to Native corporations under the ANCSA. To date, approximately one hundred 17(b) easements have been reserved within the planning area. More will be added as remaining entitlements are conveyed to village corporations and the Doyon Regional corporation. The Native corporations' final selection priorities were submitted on June 10, 2008. The process of identifying easements on these final selections has been completed and the Eastern Interior FO recommendations have been forwarded to the BLM Alaska State Office.

In addition to access provided by 17(b) easements, some villages such as Eagle, Tanacross, and Circle enjoy access provided by established roads and highways. Access on 17(b) easements to specific areas may be temporarily closed or restricted to protect public health and safety, or the condition of the trail. Some easements are limited to summer or winter travel due to trail conditions. Easement management issues are resolved through the development of memorandums of understanding and cooperative agreements.

"Revised Statute 2477" (R.S. 2477) was adopted by Congress in the 1866 Lode Mining Act and granted rights-of-way for the construction of highways across public land not reserved for public uses. Congress repealed R.S. 2477 in 1976 with enactment of the FLPMA; however, it expressly preserved those rights-of-way which existed on the date that FLPMA was passed. Over the years BLM's policy regarding recognition of those rights granted pursuant to R.S. 2477 has undergone several changes. The most recent change came with the Tenth Circuit Court of Appeals' decision in the case of *Southern Utah Wilderness Alliance v. Bureau of Land Management,* 425 F.3d 735 10th Cir. 2005. As a result of that decision, current BLM policy is to make only informal, non-binding determinations (of the validity of an R.S. 2477) for its own land use planning and management purposes. In short, the court found that BLM lacks the authority to make binding determinations on the validity of R.S. 2477 rights-of-way.

The issue of determining the validity of R.S. 2477 rights-of-way is outside the scope of the RMP. Land use planning does not affect valid R.S. 2477 rights or future assertions. In the absence of specific regulation or law, the validity of all R.S. 2477 rights-of-way is determined on a case-by-case basis through the Federal courts.

The State of Alaska and the Alaska Outdoor Council have identified approximately 50 potential R.S. 2477 trails in the planning area; however, none have been "recognized" by BLM or determined to be valid by a Court of appropriate jurisdiction. The State of Alaska initiated litigation in 1997 (*State of Alaska v. United States, F97-0009-CV*) seeking to quiet title an R.S. 2477 route (Harrison Creek-Portage Creek) through the north Steese unit. The parties reached a settlement agreement in 2000 which concluded the litigation and resulted in the State holding a 60 foot wide right-of-way along Harrison Creek and Portage Creek. The Final Judgement from US District Court states that except for the question of width, the right-of-way shall be treated as if it were a right-of-way established under R.S. 2477 for the purposes of determining the scope of property rights, permissible uses, and extent of any Federal regulatory authority. Although treated like an R.S. 2477, settlement of the case did not establish one way or the other whether the Harrison Creek-Portage Creek route was established under R.S. 2477.

There are a limited number of BLM developed and/or maintained trails in the planning area. Most of these are located within the White Mountains NRA or the Steese NCA (see section 2.2.5 Travel Management).

2.2.6.2.2. Leases, Permits and Rights-of-Way

Public lands in the planning area are open to authorization under leases, permits and rights-of-way. There are no designated right-of-way exclusion or avoidance areas. Proposals and applications and proposals are addressed on a case-by-case basis and are either authorized or rejected. Surface-disturbing and disruptive activities associated with all types of authorizations and development are subject to appropriate mitigation measures. Although there are six transportation corridors identified in the current plans, only the U.S. Creek Road which provides access into upper Nome Creek has been used very much. Issuance of rights-of-way outside of these corridors is not precluded or prohibited (Section 2.2.6.2.7 Transportation Corridors).

On average, approximately 3-5 rights-of-way, 25 Land Use Permits are issued each year. There are no leases issued under the authority of the Recreation and Public Purposes Act (R&PP) within the planning area. There is one pending lease application which if authorized) would be issued under sec. 302 of FLPMA. Compliance exams for all types of authorizations are conducted as needed and as budgetary constraints allow.

2.2.6.2.3. Communication Sites

Communication sites are authorized under 43 CFR 2800 and Title V of FLPMA. At the present time there are three such authorizations within the planning area: one issued to the Alaska Department of Transportation and Public Facilities; one issued to the BLM; and one issued to Department of the Air Force. Requests for communication site authorizations have been few; however, given the ever increasing demand for reliable communications and newer technology, it seems reasonable to expect that more requests for communication site authorizations will be received in the future.

2.2.6.2.4. Cabin and Cabin Policy

Cabins are authorized under the authority of FLPMA or ANILCA. All applications are processed in accordance with the regulations found in 43 CFR 2910. The policy on cabins and related structures, located or proposed to be located, on BLM-managed lands in Alaska is currently under

review and BLM may issue revisions to its current policy. Current guidance for the authorization of cabins is found in the Alaska Supplement to Bureau Manual 2920 dated 11/2/87. Its stated purpose is "to establish supplemental State Office guidelines and procedures to BLM Manual 2920 for responding to public inquiries and applications for cabin construction on BLM-managed or interim managed lands."

Policy. "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 land 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.I(b)."

The four types of cabins identified in the Alaska supplement are:

1. Commercial Use cabin. This is any cabin which is used for business or material gain, including trapping cabins. To qualify for a commercial use lease, the lessee should be earning a substantial portion of his/her income from the commercial enterprise associated with the lease, and be able to show a record of such use for at least 3 years preceding issuance of the lease or the lessee must submit a plan showing a definitely proposed project, a time schedule, and a need to use the public lands in the conduct of his business.
2. Special Use Cabin. A cabin used as a base of operations for University, state or local governmental, or private industry research and storage which may not fit under commercial use.
3. Subsistence Use Cabin. Any cabin which may be necessary to the season activities of an individual which are necessary to his life style to support himself and his family. The major consideration for subsistence: is the use of the land necessary to support the lessee's customary lifestyle? Cabin is not intended to be for year-round habitation and lease should so state.
4. Recreation Cabin. All cabins used primarily for private recreation purposes which do not fit within the definition given above for "Subsistence Use Cabins," "Commercial Use Cabin," or "Special Use Cabins." Cabins for private recreation purposes may not be authorized under FLPMA, and 43 CFR 2920.

In Addition guidance for authorization of cabins within conservation units is provided by sec. 1303(b) of ANILCA. This section allows for cabins to be permitted under a special use permit (lands) upon determination that the traditional and customary uses are compatible with the purposes for which the conservation unit was established.

Most, if not all, current authorizations for cabins are permits issued for trapping cabins. There are no BLM authorizations for Special Use Cabins or Subsistence Use Cabins within the planning area.

2.2.6.2.5. Trespass

BLM's policy and guidance for dealing with trespass is found in BLM Manual 9232 – Realty Trespass Abatement. The purpose of this manual section is "to provide policy for and guidance on the prevention, detection, recordation and resolution of realty trespass on the public lands." Manual 9232 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 Federal Land Policy and Management Act, 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 present time there are approximately 80 known or suspected cases of trespass (unauthorized use, development or occupancy) within the planning area. All of these will be reviewed and dealt with in a priority order as time allows. It should be noted that many of these cases were identified as potential trespass cases, but no follow-up investigation has yet been conducted to verify whether or not they truly are cases of trespass. In some cases, further investigation has resulted in closure of the case file due to a lack of evidence that unauthorized use, development or occupancy exists.

2.2.6.2.6. Recordable Disclaimers of Interest (2.2.8.1.6)

Section 315 of FLPMA and 43 CFR 1864 allows the Secretary of the Interior, under certain conditions, to issue a "disclaimer of interest" where the disclaimer will help remove a cloud on the title of such lands. The objective of the disclaimer is to eliminate the necessity for court action or private legislation in those instances where the United States asserts no ownership or record interest, based on a determination by the BLM that there is a cloud on the title to the lands, attributable to the United States, and that an interest of the United States has terminated by operation of law or is otherwise invalid.

At the present time, Recordable Disclaimers of Interest (RDIs) are being used to help confirm the State's ownership of navigable rivers and lakes in Alaska. RDIs have been issued for significant portions of Little Scottie Creek, the Salcha River, the Black River and the Porcupine River drainages. Portions of these rivers and creeks are located within the planning area. The following RDI applications are pending:

- Scottie Creek - nearing completion; expected sometime in 2009
- Tanana River - entire river in process
- Nabesna River - pending; State of Alaska requested suspension of processing
- Chisana River - pending; State of Alaska requested suspension of processing

2.2.6.2.7. Transportation Corridors

Two transportation corridors were designated in the White Mountains RMP (BLM 1986b). One corridor crosses upper Nome Creek from U.S. Creek Road and extends into the vicinity of Champion Creek. This corridor was 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 White Mountains NRA boundary near the Steese Highway and extends to lower Nome Creek. The intended purpose of this corridor was to provide access to a put-in point on Nome Creek which provides access to floatable water on Beaver Creek. The RMP also stated that both corridors could be used to provide access to existing and possible future mineral development.

Four transportation corridors were identified in the Steese RMP (BLM 1986a); two in the North unit and two in the South unit. In the North unit, 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 National Wild River corridor, and both cross the wild river corridor.

In accordance with section 1107 of ANILCA, any authorized transportation system within the wild river 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 shall be selected to minimize adverse effects on scenic, recreational, fish, and wildlife and other values of the river area.

The Steese RMP states "In order to prevent proliferation of rights-of-way, all future rights-of-way will, as far as 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" (BLM 1986a)

No other transportation corridors were or have been identified within the planning area. The Fortymile MFP (BLM 1980) does recommend preparation of a transportation plan for access routes into proposed agricultural, mineral, timber, and recreation areas. However, a plan was never developed.

2.2.6.3. Forecast or Anticipated Demand for Use

The major uses of the public lands in the planning area are subsistence and recreation, including guided and unguided hunting and fishing. Although most of the lands are closed to mineral location and mineral leasing by various withdrawals, some mining activity continues to occur on valid existing claims. The limiting factors to developing mineral deposits are availability of lands for staking new claims, the cost of access and the cost of operations. Although the price of gold, platinum, silver and other minerals is relatively high, it may have to rise even higher for mining to be profitable. If BLM makes additional land available for mineral entry and leasing, or if the Doyon Exchange is approved, there may be an increase in the demand for rights-of-way within the planning area.

People in the communities within the planning area rely heavily on the public lands for both recreation and subsistence activities; particularly those in the more isolated communities. Most of the users of public lands are Alaska residents. Demand for use of the public lands is likely to increase as the population within and adjacent to the planning area increases. Much of the increased use is expected to be casual use and require no authorization from the BLM. Comments during scoping indicated an interest in trapping and subsistence cabins and rights-of-way to provide access for future development.

Reasonably foreseeable future development scenarios will be developed for the Eastern Interior RMP and associated EIS. These will forecast anticipated demand for use. These scenarios will be summarized in the Draft RMP/EIS, under Assumptions for Analysis.

2.2.6.4. Key Features or Areas of High Potential

Isolated parcels of BLM land along the Alaska or Elliot highways, within the Fairbanks North Star Borough, or in the vicinity of communities may be suitable for disposal either through sale or exchange. This would assist in future land management by blocking up BLM-managed lands. Sales or exchanges would likely not be considered until the parcels under consideration have been relinquished by selecting entities and conveyance of Native Allotments has been completed.

There may also be an opportunity to acquire inholdings within the Steese NCA, White Mountains NRA, or Fortymile NWSR. There are four private in-holdings within the NCA, totaling 15,825 acres. Two of these units are native allotments, totaling approximately 200 acres. The remaining

two parcels are owned by the State of Alaska, totaling approximately 15,625 acres. There are four private in-holdings within the White Mountains NRA (167 Acres total), one of which is a native allotment. All four are adjacent to the Beaver Creek National WR. As recommended in the existing RMP for the White Mountains NRA (BLM 1986b), the BLM continues to pursue ownership of these properties as they become available through willing sellers.

Specific parcels that may be suitable for disposal are currently being identified. More specific information will be included in the Draft RMP/EIS.

2.2.7. Withdrawals

2.2.7.1. Current Level and Location of Use

ANCSA Withdrawals

Virtually all of the BLM-managed lands within the planning area are under some type of withdrawal pursuant to Sec. 17(d)(1) of ANCSA, ANILCA, the Wild and Scenic Rivers Act, or some other Federal law (Table 2.16). Lands within the White Mountains NRA and the Steese NCA are withdrawn by both Public Land Order (PLO) 5180 and Title IV of 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 location of metalliferous minerals) and from leasing under the Mineral Leasing Act of February 25, 1920, as amended. They are further withdrawn from mineral location through Title IV of ANILCA.

Although none of the BLM-managed lands within the planning area are currently open to location and development of new mining claims, Sec. 1312 of ANILCA gives the Secretary the discretion to permit the removal of non-leasable minerals within the White Mountains NRA. Sec. 1312 states, in part, “The Secretary under such reasonable regulations as he deems appropriate, may permit the removal of the non-leasable minerals from lands or interests in lands within the recreation area in the manner described by section 10 of the Act of August 4, 1939, as amended (43 U.S.C. 387), and he may permit the removal of leasable minerals from the lands or interests in lands within the recreation area in accordance with the mineral leasing laws, if he finds that such disposition would not have significant adverse effects on the administration of the recreation areas.” Sec. 402(b) of ANILCA withdraws the Steese NCA from location, entry, and patent under the U.S. mining laws but allows the Secretary to open lands to mineral entry where suitable.

The current RMP for the Steese NCA (BLM 1986a) provides that new mineral development in certain areas outside of the primitive and semi-primitive motorized restricted units can be permitted as long as it does not significantly impair recreational values or use. However, this decision was never implemented and PLO 5180 is still in effect. The resource management plans for both the White Mountains NRA and the Steese NCA provide for the disposal of sand, gravel, rock and other saleable minerals under 43 CFR 3600 if such disposals are compatible with other provisions of each respective plan.

The BLM-managed land within the Upper Black River Subunit (Map 1.1) is 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. There are no existing Federal mining claims in the Upper Black River Subunit.

The majority of BLM-managed lands in the Fortymile Subunit are withdrawn under PLOs 5173, 5179 (as amended by 5250), 5184 or amendments. 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, this recommendation has not been implemented and the PLOs are still in effect. The lands remain withdrawn for selection, and have not been opened to new mineral entry.

Other Withdrawals

There are other types of withdrawals in the planning area besides those which were authorized by ANCSA. These include BLM withdrawals for administrative sites and withdrawals by other agencies. All of those withdrawals which were reserved for and/or managed by 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. In addition to the specific withdrawals discussed below, there are withdrawals for several other agencies and purposes located within the planning area as shown in Table 2.17. Most of these require little time and attention from BLM except for administrative actions required at times of expiration, revocation and renewal.

Recreation withdrawal in Eagle (PLO 3432): On August 13, 1964, approximately 816 acres were withdrawn from all forms of appropriation under the public land laws and reserved under the jurisdiction of the BLM for public recreation purposes. This property is located next to the City of Eagle. BLM currently maintains and manages a campground on the property. Historic Fort Egbert is located nearby and is one of several attractions that visitors come to see.

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 their headquarters site 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. There are housing facilities, storage facilities, kitchen, shower and workshop, as well as a fuel tank and a heli-port located on this site. It continues to receive a great deal of use by BLM and other agencies, and is a very important part of summer field season operations.

Tanacross Administrative Site (PLO 1768): On December 15, 1958, approximately 108 acres of land was withdrawn form all forms of appropriation under the public land laws and reserved for use of the BLM as an administrative site near Tanacross, Alaska. For many years BLM maintained a Fire Guard Station at this site; however, that station was closed after a fire destroyed

most of the buildings in the mid 1980s. Since that time 77.62 acres have been conveyed to native corporations and 24.70 acres of the original site remain under BLM's management jurisdiction.

Central Administrative Site (PLO 519): On August 30, 1948, approximately 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. It was originally used as a Fire Guard Station but is now a field station used primarily by BLM employees from the Fairbanks District Office. However, it is still used by Alaska Fire Service as the need arises. The facilities on site include a 2 bedroom main cabin with living room, kitchen and bathroom; a garage/shop, storage sheds, loading dock, two vault toilets, one 500 gallon fuel tank for heating oil and one 500 gallon fuel tank for gasoline.

Steese Highway Recreational Withdrawal (PLO 4176): Issued on March 9, 1967, this PLO withdrew five tracts of land along the Steese Highway northeast of Fairbanks for protection of recreational values. The White Mountains RMP (BLM 1986b) directed BLM to retain three of the tracts to serve as staging areas for people wishing to travel into the White Mountains NRA. The two tracts not identified for retention were conveyed to the State in 1991 (patent #50-91-0224). The remaining tracts under PLO 4176 include:

1. Cripple Creek: Located on the Steese Highway and site of the Cripple Creek Campground (240 acres).
2. US Creek: Located at Mile 56 Steese Highway, this site has since been developed into the US Creek Wayside (105 acres).
3. Perhaps Creek: Located at Mile 53 Steese Highway, this site is currently undeveloped (200).

Easement for Public Highways (PLO 1613)

Existing Public Land Orders and Executive Orders

Table 2.16 lists existing public land orders (PLO) and Executive Order (EO) within the planning area, exclusive of those withdrawals by other agencies. The withdrawals in this table are generally withdrawal of land for administrative use by the BLM (i.e. campground) or to classify lands for selection by either Native Corporations or the State of Alaska.

Table 2.16. Existing BLM withdrawals in the Eastern Interior Planning Area

PLO number	PLO Type or Agency	Description
PLO 386	BLM	Reducing withdrawal of public lands along Alaska Highway (modified by PLOs 4234 and 1613)
PLO 399	BLM	Revocation of EO 1324 1/2 withdrawing public lands containing hot springs in Alaska and amending EO 5389 to apply to hot springs in Alaska
PLO 519	BLM	Administrative site, Central Field Station (7 ac)
PLO 1699	BLM	Administrative site, Chicken Field Station (11 ac)
PLO 753	BLM	Administrative site, Eagle Field Station (12 ac)
PLO 1768	BLM	Administrative Site, Tanacross
PLO 3432	BLM	Wdl for public recreation values, Eagle Recreation Site
PLO 3943	BLM	Wdl for public recreation values, West Fork Campground and South Fork Wayside
PLO 4176	BLM	Wdl for public recreation values, Steese Highway

PLO number	PLO Type or Agency	Description
PLO 5150	BLM	Wdl for Utility and Transportation Corridor (Trans Alaska Pipeline)
PLO 5182	BLM	Amended PLO 5150 (outer corridor)
PLO 5190	BLM	Modification & Correction of PLO 5150, Utility Corridor
PLO 5173	ANCSA 17(d)(1)	Wdl for selection by Regional Corp. (Tanana region); amended by PLOs 5213, 5252, 5321, and 5391
PLO 5178	ANCSA 17(d)(1)	Wdl for selection by Regional Corp. (Copper river region); amended by PLOs 5214, 5252, and 5257.
PLO 5179	ANCSA 17(d)(1)	Wdl 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)	Wdl for Classification & 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)	Wdl for Classification or Reclassification of some areas withdrawn by Sec. 11 of ANCSA
PLO 5186	ANCSA 17(d)(1)	Wdl for Classification & Protection of Public Interest in Lands Not Selected by State. Amended by PLO 5254 and 5242
PLO 5187	ANCSA 17(d)(1)	Wdl for Classification & Protection Pub. Int. in lands in military reservations
PLO 5563	BLM	Amend EO 5389 to permit withdrawal of land under Sec 11 of ANCSA
PLO 5657	BLM	Classification of Lands for Selection by State - 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
Abbreviations: Alaska Native Claims Settlement Act (ANCSA); Executive Order (EO); Public Land Order (PLO); withdrawn (Wdl).		

Table 2.17 lists withdrawals of public land for use by other agencies. These withdrawals will remain in place unless the agency wants to relinquish them.

Table 2.17. Existing withdrawals for Other Agencies in the Eastern Interior Planning Area

PLO number	Agency	Description (general location)
EO 7596	War Dept.	Wdl Military (Fort Wainwright)
EO 8020	War Dept.	Wdl Military - Flood Control (North Pole)
EO 8847	War Dept.	Wdl for aerial bombing range (Tanana Flats)
PLO 684	Air Force	Wdl Military (Eielson)
PLO 690	Air Force	Wdl for Military (Fort Wainwright)
PLO 748	Air Force	Correction to PLO 690
PLO 794	Air Force	Wdl for Military (Eielson)
PLO 818	Air Force	Wdl for Military (Fort Wainwright)
PLO 854	Air Force	Wdl for Military (Fort Wainwright)
PLO 910	Army	Wdl for Military (Gerstle River)
PLO 1153	Army	Wdl for Military (Big Delta)

PLO number	Agency	Description (general location)
PLO 1203	Air Force	Wdl for Military (Eielson)
PLO 1205	Air Force	Wdl for Military use - Air Force (Eielson)
PLO 1345	Air Force	Wdl for Military (Eielson)
PLO 1444	Air Force	Wdl for Military (Northway)
PLO 1521	Army	Wdl for Military (Eielson)
PLO 1523	Army	Wdl for Military (Eielson) and correction to PLO 1345
PLO 1574	Air Force	Wdl for Air Force Recreation Site (Birch Lake)
PLO 1760	Air Force	Wdl for Military (Fairbanks and Fort Wainwright)
PLO 1887	Army	Wdl for Military (Haines-FBX Products Pipeline System)
PLO 1917	Army	Wdl for Military (Eielson)
PLO 2948	Army	Wdl of Lands for military purposes, Dept. of Army (Donnelly Flats)
PLO 3013	Army	Wdl for cold weather experimental purposes (Permafrost Station, Fairbanks); revoked PLO 533
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 (AK DOT)	Wdl of land for a 300' easement for highway purposes including Richardson and Glenn highways (modified PLO 386, Table 2.16)
PLO 1980	Forest Service	Wdl for research site (Shaw Creek Experimental Station)
PLO 2550	FAA	Wdl for airport purposes - vacating Air Navigation Site #186
PLO 4349	FAA	Wdl for FAA Administrative Site (Northway)
PLO 3708	NASA	Wdl for NASA Facilities (Gilmore Creek Tracking Station)
PLO 6709	NOAA	Modify PLO 3708 - transfer administration from NASA to NOAA
PLO 4234	GSA	Wdl for General Services Administration Site
PLO 5645	GSA	Wdl Customs and Immigration Station (Alaska-Canada border)
PLO 7336	GSA	Wdl Extension, Poker Creek Border Station.
PLO 4508	Dept. of Commerce	Wdl for Geophysical Observation
Abbreviations: Executive Order (EO); Public Land Order (PLO); National Aeronautics and Space Administration (NASA); National Oceanic and Atmospheric Administration (NOAA); General Services Administration (GSA); withdrawn (Wdl).		

2.2.7.2. Forecast or Anticipated Demand for Use

As evidenced by the issues raised during scoping (BLM 2008) the State and other parties have recommended that BLM review and consider revocation of ANCSA 17(d)(1) withdrawals thus making more land within the planning area available for mineral entry and leasing. There is also a recommendation from other parties that BLM retain at least some of these withdrawals in order to protect lands from potential development. Comments received during scoping also indicated that there is public support for BLM to retain the recreational withdrawal in Eagle (PLO 3432).

2.2.7.3. Key Features or Areas of High Potential

During scoping the State of Alaska and various mining associations identified the Steese NCA and the Fortymile as areas where there is high mineral potential and where BLM should consider withdrawal revocation (BLM 2008). More detailed information on areas with mineral potential may be found in the mineral occurrence and potential development reports for the Eastern Interior planning area (BLM 2009a and 2009b).

2.3. Special Designations

2.3.1. Research Natural Areas

There are four existing Research Natural Areas (RNAs) within the Eastern Interior planning area (Map 2.6 White Mountains, Current ROS Classifications and Map 2.7 Steese NCA, Current ROS Classifications). These RNAs were established through the Steese and the White Mountains RMPs (BLM 1986a and BLM 1986b). The identification of RNAs were based on pre-defined 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 2.18. Existing Research Natural Areas within the Eastern Interior Planning Area

Name	General Location	Legal Location	Acreage
Big Windy Hot Springs	Steese south unit	T.4N., R.16E., secs 29 and 32, Fairbanks	160
Limestone Jags	White Mountains NRA	T.8N, R.1E, Fairbanks	5,145
Mount Prindle	White Mountains and Steese north unit	T. 8 N, R. 6 E, Fairbanks	5,945
Serpentine Slide	White Mountains NRA	T.10 N, R.1 W, Fairbanks	4,275

2.3.1.1. Big Windy Hot Springs RNA

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 principal feature or type need encompassed by the RNA is an undeveloped hot spring system (Juday 1998). Big Windy Hot Springs is part of a cluster of three hot springs in central Alaska, east of Fairbanks. The other two springs in this group, Chena Hot Springs and Circle Hot Springs are located on private land and have been developed for commercial resort uses. All other hot springs in central Alaska are located west of Fairbanks and most are either developed or have been modified in a way that has 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.

2.3.1.2. 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 at Limestone Jags are karst (limestone dissolution)

features in an unusual 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. Additionally, in many areas such features were later destroyed through glaciation. One of the largest limestone dissolution cave reported in high latitudes of North America is found in the RNA (Juday 1989).

2.3.1.3. Mount Prindle RNA

Mount Prindle RNA is located on the boundary between the White Mountains NRA and the Steese NCA. About 60% of the RNA is within the White Mountains with the remaining 40% 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 (Juday 1988). At least four glacial advances, spanning several hundred of 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.

2.3.1.4. Serpentine Slide RNA

Serpentine Slide RNA is located west of Beaver Creek, within the White Mountains. 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 rocks lack calcium and have high levels of magnesium and heavy metals, resulting in a substrate that is toxic to plants not specially adapted to grow under such conditions. The RNA contains one of the largest surface exposures of serpentine in Alaska (Juday 1992). Serpentine exposures are often relatively small because they are fragments of deep-ocean crustal material transported to the surface. Serpentine forms under very specific conditions, making it useful in understanding the origin and history of continental landscapes. The earthslide found in the RNA is also an unusual feature in Interior Alaska. The hydrology of the RNA is also of interest to researchers. Most large rivers in interior Alaska have large watersheds that carry glacial meltwater. Beaver Creek carries no glacial sediment and runs clear.

2.3.2. Wild and Scenic Rivers

There are three designated rivers within the planning area. All three rivers were added to the Wild and Scenic Act (P.L.90-542 as amended) through sec. 603 of ANILCA (P.L. 96-487 as amended). Sec. 605 of ANILCA addresses administrative provisions and classifies the river segments as either wild or scenic. The ANILCA also directed BLM to prepare management plans for each river. These plans were completed in 1983. These rivers are discussed in greater detail under section 2.2.4 Recreation.

2.3.2.1. Fortymile Wild and Scenic River

The ANILCA (P.L. 96-487) established the Fortymile, and certain tributaries, as a component of the National Wild and Scenic Rivers System. Located in the Interior Alaska along the United States-Canada Border, the Fortymile River is approximately 180 air miles east of Fairbanks and encompasses approximately 250,000 acres. Subject to valid existing rights, ANILCA classified and designated approximately 392 miles of stream in the Fortymile drainage pursuant to the Wild

and Scenic Rivers Act (P.L. 90-542), identified 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.

The Mosquito Fork downstream from the vicinity of Kechemstuk to Ingle Creek, North Fork, Champion Creek, Middle Fork downstream from the confluence of Joseph Creek, and Joseph Creek segments of the Fortymile component are classified as wild river areas (179 miles). The Wade Creek unit of the Fortymile component (10 miles) is classified as a recreational river. The remaining segments are classified as scenic (203 miles), including a three mile segment of the Mosquito Fork between the mouth of Ingle Creek and the Taylor Highway Bridge which was not classified in ANILCA. This segment was later classified as scenic through Part III of the Fortymile River Management Plan (BLM 1983).

2.3.2.2. Beaver Creek Wild and Scenic River

The ANILCA (PL 96-487 as amended) established the upper portion of Beaver Creek as a component of the National Wild and Scenic Rivers System, to be administered by the Secretary of the Interior through the BLM and the U.S. Fish and Wildlife Service. Subject to prior existing rights, ANILCA classified and designated approximately 127 miles of Beaver Creek as a "wild" river pursuant to the Wild and Scenic Rivers Act (PL 90-542). The wild segment is located within the White Mountains NRA and the Yukon Flats NWR.

Beaver Creek is located in Interior Alaska, approximately 50 air miles north of Fairbanks. It is a moderately swift, shallow river surrounded by rolling hills in its upper reaches. Beaver Creek flows past the jagged limestone peaks of the White Mountains before slowing to a sluggish meandering river as it passes through the marshy Yukon Flats to the Yukon River, a total distance of 303 miles. Major tributaries include Bear, Champion, Nome, Trail, Wickersham, Fossil, and Victoria Creeks.

2.3.2.3. Birch Creek Wild and Scenic River

Birch Creek was added to the Wild and Scenic Act (P.L. 90-542 as amended) through the ANILCA (P.L. 96-487 as amended) in sec. 603 (46) which identifies the 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 designated as wild in sec. 605 (b).

Birch Creek National Wild River is located primarily in the south unit of the Steese NCA, which is located approximately 70 miles northeast of Fairbanks, Alaska. The BLM manages 110 miles of upper Birch Creek as a wild river under the Wild and Scenic Rivers Act. The river continues through state, private and Yukon Flats NWR for a total of 344 miles before emptying into the Yukon River about halfway between Fort Yukon and Beaver.

2.4. Social and Economic Factors

2.4.1. Economics

2.4.1.1. Regional Overview

The planning area includes the Fairbanks North Star Borough, the Southeast Fairbanks Census Area, and the Yukon-Koyukuk Census Area. Fairbanks, Tok, and Delta Junction have the largest populations and are "gateway communities," trade and transportation centers for the region. Fort Yukon (population 591) is the largest native community. It is also a "community of place," a key location in the region. The Fairbanks North Star Borough is the second most populous area (2007 population estimate 90,963) in the state. The economy of the borough is the most diverse and modern in the planning area. Two military reservations are shown in Census demographics.

Thirty-five communities within the planning area are described in this section. They range in population from 15 (Dot Lake) to 31,627 (Fairbanks). All of the remote native villages in the planning area, including those along the Alaska Highway System are dependent upon natural resources for subsistence. Subsistence is an interest of significance in the planning area, as are outdoor recreation, and mining.

Fairbanks has commercial airline service connecting to cities outside the region. Regional or charter air service provides year-round access to all villages in the planning area. Most communities in the planning area have access to the Alaska Highway System. Few of the communities are incorporated. The Fairbanks North Star Borough and Fort Yukon collect taxes.

Communities in the planning area range from market economy to mixed subsistence-market economy. Villages such as Birch Creek and Tetlin feature mixed subsistence-markets, while Fairbanks North Star Borough communities are market economy. Incomes are influenced by opportunity for large mining, government, and service and transportation jobs. Median family income ranges higher than the Alaska average in a number of communities, while in the more remote subsistence-oriented communities it is lower. The unemployment rate in most communities is generally higher than the Anchorage, Fairbanks, and the Alaska average.

Recent change agents in the planning area include the opening and operation of the Pogo Mine, the Fort Knox Mine, operation of the Trans Alaska Pipeline System (TAPs), the passage of ANCSA and the passage of ANILCA, including creation of six conservation units in the area: Steese NCA, White Mountains NRA, Yukon-Charley Rivers NP, and the Tetlin, Yukon Flats and Arctic NWR. These events directly resulted in employment and income in the planning area. With the growth of major population centers in southcentral Alaska in the last 30 years, visitation and use of area resources has increased dramatically. Population in the area has grown over the last three decades, although migration from the area has also increased (Table 2.19).

Increasing incomes and desire for basic amenities often not available in bush villages inspire out-migration. In the Yukon-Koyukuk Census Area, for example, the community water source is often the nearby river. Data presented by the state demographer clearly shows a rural to urban movement of Alaska's native population, similar to movement of rural populations in the continental U.S., which has continued for at least a century. The Fairbanks North Star Borough is experiencing in migration of Alaska Natives.

Market basket surveys conducted by the University of Alaska Cooperative Extension Service in 2007 reported Fairbanks area electricity costs 30% higher than Anchorage, and 70% higher than Portland, Oregon. In Delta Junction, the market basket food survey reported costs about 25% higher than Anchorage.

For purposes of discussion, communities within the planning have been grouped into five areas based on geography and social and economic factors. The following sections provide more detailed descriptions of these five areas. Table 2.19 below and Tables 11.2 - 11.4 in Appendix B provide data by State, borough, census area, and community. Additional detailed community information is available from the Alaska Division of Community and Regional Affairs, Alaska Community Database at: http://www.commerce.state.ak.us/dca/commdb/CF_COMDB.htm

2.4.1.2. Fairbanks Area

- Fairbanks
- Eielson Air Force Base (AFB)
- Ester
- Fox
- Harding Lake
- Livengood
- Moose Creek
- North Pole
- Pleasant Valley
- Salcha
- Two Rivers

The communities listed above are within Fairbanks North Star Borough except for Livengood, which is in the Yukon-Koyukuk Census Area. All are connected to the Alaska Highway System. They are generally located west of public land (BLM-managed) blocks in the planning area. These largest population centers in the planning area have highway access to the White Mountain NRA and the Steese NCA. Alaska Native populations in these communities range from 0 in Livengood to 13.3% in Fairbanks (the Alaska Native population of Alaska is 19%), and none have ANCSA corporations.

Median Family income varies widely but is close to or above the Alaska median except in Livengood, and at Eilson AFB where it is substantially lower. Employment is influenced by the diversity of the Fairbanks marketplace, to which these communities have access. Fairbanks and the adjacent military bases exert huge influence upon all communities in this group. Employment opportunities in Livengood are the lowest in this group of communities. However, more than half of the homes (18 of 31) in Livengood are used only seasonally. Fairbanks North Star Borough has several taxes including: property, bed, alcohol, and tobacco taxes (Table 11.3 in Appendix B). Per capita revenue from taxes in Fairbanks is $973 compared to $1566 in Anchorage. These communities have the highest number of houses with water and wastewater services in the planning area.

2.4.1.3. Delta Junction Area

- Delta Junction
- Deltana
- Big Delta

- Dry Creek
- Fort Greely

These towns are all within the Southeast Fairbanks Census Area and are connected to the Alaska Highway System. They are fairly distant from, and mostly south or south west of public land blocks in the planning area. These communities have low Alaska Native populations (0 to 5.6%) and none have ANCSA corporations. This is the second most populous grouping of communities within the planning area. Employment influences in this area include the Pogo mine, Fort Greely, The TransAlaska Pipeline System, the Delta/Greely School District, and various state agencies. With the exception of Fort Greely, these communities do not have centralized water and wastewater services. Median Family income is similar in Big Delta, Deltana, and Delta Junction, surprisingly lower at Fort Greely, and much lower at Dry Creek. Delta Junction is the only incorporated city. None of these communities collect taxes.

The Alaska Community Database (ADCRA 2008) explains Dry Creek, however, is not accurately described by Census 2000. The mainstay of the Dry Creek community is the Living Word Ministry, operated as a cooperative living situation. U.S. Census data for Year 2000 showed 10 residents as employed. The Dry Creek unemployment rate at that time was 0 percent, although 88.64 percent of all adults were not in the work force. The median household income was $12,500, per capita income was $7,779, and 69.39 percent of residents were living below the poverty level (Appendix B, Tables 11.2, 11.4).

2.4.1.4. Alaska Highway Area

- Tok
- Dot Lake
- Dot Lake Village
- Healy Lake
- Northway
- Northway Junction
- Northway Village
- Tanacross
- Tetlin

These towns are all within the Southeast Fairbanks Census Area and are also connected to the Alaska Highway System. They are fair distance from, and generally south or south west of public land blocks in the planning area, although there are native selected lands relatively close by (within 20 miles). Tok has the highest population in this community group (Table 2.19). All other communities range from 173 to 15 residents. Native Alaskans comprise most of the population in all but two villages; Tok and Dot Lake.

Poverty level incomes are notably high in Tetlin (46.9% of the population), Tanacross (33.3%), and Northway Village (25%). Other communities are similar to Fairbanks in this respect. Median family incomes, interestingly, range both higher and lower than Fairbanks in various communities (Appendix B, Table 11.2). This probably results from the availability of state jobs in education, social services, and highway related positions. Most of these communities either have few or no plumbing facilities in residences. High ground water further limits water wells and wastewater disposal in many villages. Tanacross has community water and septic systems for part of the community. Tok has no community water or wastewater services. None of these communities collect taxes.

2.4.1.5. Fortymile

- Alcan Border
- Central
- Chicken
- Eagle
- Eagle Village

These towns are all within the Southeast Fairbanks Census Area except Central, which is in the Yukon-Koyukuk Census Area. they are also all connected to the Alaska Highway System. They are fairly close to public land blocks in the planning area. Although not geographically located in the Fortymile region, Central is accessible via the Steese Highway from Fairbanks and is located near the Steese NCA. The other communities are access via the Taylor Highway out of Tok and are located near the Fortymile NWSR.

These are all very small communities (Table 2.19); Eagle, the largest, has 109 residents. The Native Alaskan population is highest in Eagle Village (44.1%) and Alcan Border (23.8%). Other communities have 0 to 9.7% Native Alaskan residents. Alcan Border has the highest median family income of any community in the planning area ($87,041), primarily due to government employment. In Eagle Village 56.7% of families are considered having poverty level incomes. Alcan Border has community water and wastewater services, while other communities in this group do not. These are unincorporated communities that collect no taxes.

2.4.1.6. Yukon River

- Beaver
- Birch Creek
- Chalkyitsik
- Circle
- Stevens Village
- Fort Yukon

These are native villages located generally along the Yukon River, and except for Circle, are without highway access. Circle is accessible via the Steese Highway. All are within the Yukon-Koyukuk Census Area. They are fairly close to, and generally north or west of public land blocks in the planning area.

Fort Yukon is the most populous (591), and the other five communities have 102 or fewer residents (Table 2.19). For nearly all of these locations, population is at its lowest in 40 to 50 years. These communities are comprised of 85 to 100% Alaska Natives. Poverty rates range from 11.1% (Beaver) to 61.2% (Stevens Village). Substantial numbers of adults in these communities do not participate in the labor force. Median family incomes are far below the Fairbanks and the Alaska medians (Appendix B, Table 11.2). Fort Yukon has some tribal businesses. Generally education, administration, and social service jobs provide the highest income within these communities. Tourism is growing. The BLM, Alaska Fire Service also provides seasonal employment as two fire teams are based in Fort Yukon. Fort Yukon has a 3% sales tax.

2.4.1.7. Native Corporations and Tribal Organizations

Doyon, Limited

Doyon, Limited (Doyon), the Native regional corporation for interior Alaska, is one of thirteen Native regional for-profit corporations established by Congress in 1971 under ANCSA. Doyon is the largest private landowner in Alaska and one of the largest private landowners in North America, with a land entitlement of 12.5 million acres and ownership of about 10 million acres. Doyon's lands extend north to south from the Brooks Range to the Alaska Range, and east to west from near the Canadian border to the west coast of Alaska.

According to corporation policy, Doyon annually distributes 50% of the average of the last 5 years' net profits in the form of distributions and contributions. In 2005, Doyon earned $12.23 million in after-tax net income on gross revenues of $80.5 million. Charitable contributions and shareholder dividends totaled more than $5 million.

The Federal lands within the Yukon Flats NWR that could potentially be acquired by Doyon in the proposed Doyon Land Exchange would become ANCSA lands. Under section 7(i) of ANCSA, Doyon is required to share 70% of revenues derived from natural resource development on Doyon's ANCSA lands with other ANCSA regional corporations, village corporations in the Doyon region, and Doyon shareholders not affiliated with Doyon village corporations (called "at large" shareholders). Half of the revenues remitted to other ANCSA regional corporations are required to be shared with their respective village corporations and at-large shareholders.

Tanana Chiefs Conference

Tanana Chiefs Conference (TCC) was formed in 1962 for the purpose of pursuing land claims and advocating for the betterment of member Tribes. Incorporated in 1972, TCC currently is a nonprofit Tribal consortium of 42 Athabascan villages. The TCC supports a wide variety of services and programs including health- and family-centered services, economic development, public safety, Tribal governments, and self governance.

Council of Athabascan Tribal Governments

The Council of Athabascan Tribal Governments (CATG) is an Alaska Tribal consortium composed of the Arctic Village Council, Beaver Village Council, Birch Creek Village Council, Canyon Village, Chalkyitsik Village Council, Circle Village Council, Gwichyaa Zhee Tribal government, Rampart Village Council, Stevens Village Tribal Council, Venetie Village Council, and Native Village of Venetie Tribal government. According to the CATG web page (www.catg.org), CATG is a "grassroots organization founded in 1985 on the principals of Tribal self-governance, working to empower and build capacity of local member Tribal governments to assume management responsibility of programs within their villages."

2.4.1.8. Planning Requirements for Economics

Planning requirements for social sciences are outlined in the BLM Land Use Planning Handbook H-1601-1 (BLM 2005) appendices D and F. Appendix D, Social Science Considerations in Land use Planning Decisions, provides guidance on integrating social science information into the planning process. Table D-1, Social Science Activities in Land Use Planning (page 2), outlines the steps to follow during the planning process as related to social sciences. Table D-2, Topics for Socio-economic Analysis (page 5), lists the demographic and social factors to consider during planning. The narrative for the data in Appendix B tables corresponds to Table D-2 as referenced above. Appendix F-3 of the Planning Handbook provides an annotated outline of the

Analysis of the Management Situation (AMS) which outlines social and economic topics to be discussed in the AMS.

2.4.1.9. Methods and Sources

Data given in the Appendix B and Table 2.19 is taken from most current sources. Data used in this analysis are from the Alaska Department of Labor and Workforce Development (ADLWD), the U.S. Census Bureau, American Community Survey, and the Alaska Division of Community Advocacy (ADCA) Community Database Online. The State of Alaska revises estimates annually for some data. Demographics indicate actual census populations through the year 2000. The Census Bureau American Community Survey 2005 provides updated census data for communities and counties having a minimum population of 65,000. Difficulty arises in presenting data for rural Alaska communities that is consistently current. Nearly all income and inequality data for rural Alaska communities is from Census 2000.

2.4.1.10. Population (1960-2007)

The following table includes population data for the planning area. These are U.S. Census Bureau data, except for the estimates by the ADLWD shown for 2007. ADCRA is the Alaska Division of Community and Regional Affairs.

Table 2.19. Population Data for the Eastern Interior Planning Area

Community or Area	**Population (2007)**	**Population (2000)**	**Population (1990)**	**Population (1980)**	**Population (1970)**	**Population (1960)**
Source	**ADLWD**	**ADCRA**	**ADCRA**	**ADCRA**	**ADCRA**	**ADCRA**
Alaska	676,987	626,932	550,043	419,800	308,500	230,400
Anchorage	283,813	260,283	226,338	174,431	126,385	82,833
Fairbanks North Star Borough	90,963	82,840	77,720	53,983	45,864	43,412
Southeast Fairbanks Census Area	7,002	6,174	5,913	5,676	4,308	2,926
Delta Junction Area						
Big Delta	790	749	400	285	0	0
Delta Junction	974	885	652	945	703	0
Deltana	2,072	1,570	na	na	na	na
Dry Creek	94	128	106	0	0	0
Fort Greely	766	461	1,299	1,635	1,820	0
Fairbanks Area						
Eilson AFB	4,119	5,400	5,251	5,232	6,149	0
Ester	2,041	1,680	147	149	264	81
Fairbanks	31,627	30,224	30,843	22,645	14,771	13,311
Fox	354	300	275	123	0	0
Harding/ Birch Lakes	245	216	27	na	na	na

Community or Area	Population (2007)	Population (2000)	Population (1990)	Population (1980)	Population (1970)	Population (1960)
Source	**ADLWD**	**ADCRA**	**ADCRA**	**ADCRA**	**ADCRA**	**ADCRA**
Livengood	21	29	na	na	na	na
Moose Creek	650	542	610	510	0	0
North Pole	1,945	1,570	1,456	724	265	358
Pleasant Valley	671	623	401	0	0	0
Salcha	995	854	354	319	0	0
Two Rivers	621	482	453	359	0	0
Alaska Highway Area						
Tanacross	173	140	106	117	84	102
Tetlin	165	117	87	107	114	122
Tok	1,353	1,393	935	589	214	129
Northway	81	95	123	73	40	196
Northway Junction	61	72	88	0	0	0
Northway Village	86	107	113	112	0	0
Healy Lake	37	37	47	33	0	0
Dot Lake	15	19	70	67	42	56
Dot Lake Village	55	38	na	na	na	na
Fortymile Area						
Alcan Border (Boundary)	17	21	27	0	0	0
Central	95	134	52	36	26	28
Chicken	19	17	0	0	0	0
Eagle	109	129	168	110	36	92
Eagle Village	76	68	35	54	0	0
Yukon River Area						
Beaver	65	84	103	66	101	101
Birch Creek	26	28	42	32	45	32
Chalkyitsik	72	83	90	100	130	57
Circle	102	100	73	81	54	41
Stevens Village	71	87	102	96	74	102
Fort Yukon	591	595	580	619	448	701

2.4.2. Social

This section discusses the social conditions of the various communities located within the planning area. The planning area is divided into four subunits: the White Mountains, Steese,

Fortymile, and Upper Black River. Previous planning efforts did not address the social conditions or effects of management actions on local communities.

The predominant use of BLM lands is subsistence, with recreation being a significant use closer to Fairbanks and mining occurring in the Fortymile and Circle areas. The Black River area is very remote, precluding most recreation and resource extraction unrelated to subsistence users from area communities.

2.4.2.1. Occupational and Interest Groups

Discussions of affected 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, recreationists, miners, groups and individuals who prioritize resource protection, and Alaska Natives. It should be noted that these groups are not mutually exclusive and examples of households that fit into many categories are likely to be present.

Rural Subsistence Users

Subsistence is an important part of the prehistory, history, culture, and economy of the study area. ANILCA established a preference for rural residents hunting and fishing on federally managed land in Alaska as described more fully in section 2.4.3 Subsistence, including a explanation of “rural” in this sparsely populated, non-agricultural state. It should be noted that, as an economic center, Fairbanks has been identified as non-rural. For purposes of this report, "remote" is defined more by year around surface travel time to Fairbanks than by access to a paved or gravel road. Subsistence is separate from sport hunting and fishing, where the products supplement a diet based on non-local foods.

There are many challenges facing the rural population that relies on subsistence food sources today, including changes in climate affecting habitat and access. Increasing transportation costs increase the amount of subsistence use as an alternative to shipping non-local food to rural areas, but also increase the cost of subsistence tools and equipment. This is particularly true in Alaska, where most non-local food and products are shipped from the Lower-48 states. Increasing heating fuel costs result in greater use of local firewood sources. Users may face increasingly stressful social situations as they try to balance their traditional lifestyles with demands from government agencies imposing greater restrictions and increases in the number of other public land users. Transfer of land from Federal ownership may alter access to subsistence resources. These transfers are required by statute and, as with all ownership changes, are accompanied by the right to determine land use by the new owner. When lands are transferred from BLM to the State of Alaska, the state hunting regulations apply, rather than the Federal regulations.

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 gold-seekers. As a result, many of the communities within the planning area retain a very traditional lifestyle, maintaining a close relationship with the land, placing great value on subsistence use and local resources, and preserving their cultural values and practices. 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 northernmost portion of the planning area, and have the largest traditional territory of the five groups. This 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). In the middle of the 19th century the Gwich'in were divided into nine regional bands, each corresponding to a major river drainage (Simeone 1982). Current communities within the planning area correspond to the remaining bands, which numbered six in 1977 (Slobodin 1981): Chalkyitsik (Tranjik Gwich'in or Black River Band), Fort Yukon and Circle (Kutcha 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 the caribou that range throughout their territory, namely the Porcupine Herd. 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.

Hän

The Hän occupy the middle-eastern portion of the planning area, along the upper Yukon River in both Alaska and Canada, and including the Fortymile River area. Currently, the only two communities within the planning area that have a Hän population are Eagle and Eagle Village. Chicken is also located within the traditional territory of the Hän and is still an important subsistence harvest area. 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 middle-western portion of the planning area, along either side of the Tanana River. The current communities within both the Fairbanks (section 2.4.1.2) and Delta Junction areas (section 2.4.1.3) 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. Like the Gwich'in, the Tanana

also organized themselves into several territorial bands. However, due to the large influx of Euroamericans beginning in the late 19th century, the territorial boundaries became blurred, and descendents settled in various newly-formed communities throughout the area and in surrounding regions (McKennan 1981). According to Simeone (1982) the Tanana were culturally aligned with Koyukon Athabascans living along the lower Tanana and Yukon rivers.

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. Tok, although located within the traditional territory of the Tanacross, is home to several Athabascan cultures, as it is a hub community that has attracted people from throughout the region. Caribou are of primary importance to the Tanacross, as are moose, ducks, Dall sheep, marmot, ground squirrel and whitefish (McKennan 1981). Salmon do not range this far up the Tanana River, and are therefore 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 (McKennan 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 many residents. In addition to local recreation use, tourists from all over the United States and the world come to this area with outdoor recreation as an important component of their travel. Overall, the public lands in the area support some type of recreational activity during all times of the year and BLM's primary management focus in the White Mountains NRA is recreation. See section 2.2.4 Recreation.

Recreationists are very diverse groups of people, and changes in recreation management can affect the people who engage in various activities very differently. A significant example is motorized and non-motorized recreational activities. While snowmobile riders seek open access to all public lands, skiers and dog team drivers often 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. For more details, see section 2.2.5 Travel Management.

Increased recreational hunting has had an impact on subsistence users. Local residents indicated that in recent years, harvest quotas on the Taylor Highway were met by hunters from Anchorage

and Fairbanks after only a couple of days. Special hunts were required for subsistence users, which may result in a smaller harvest quota in the future, to allow for the subsistence hunt.

Miners

Mining is a significant historic and current use of the planing area and some of the public lands within the planning area. More detailed information is provided in the Mineral Occurrence and Development Potential Reports (BLM 2009a and BLM 2009b). Miners face many legal and environmental challenges. Currently, miners are precluded from patenting their claims, so have continued government involvement in their operations when they feel they should be free to convert claims to their private ownership, as miners have for generations. During an era of increasing demand for minerals, much of the Federal land in the planning area is closed to mineral entry (other than the navigable river bottoms which are open to state mining claims). The climate of the planning area creates difficulties with year-round operations. Changes in land ownership may affect access to claims on public lands, though all existing Federal claims will remain in force unless relinquished or found to be invalid by BLM. Many miners have difficulty maintaining the historic "Yukon" lifestyle by benefiting from high demand for and use of minerals while meeting ever higher environmental standards for mineral production. In particular, there is a sense among the members of this group, that miners are held to a higher standard than recreationists or subsistence users.

The Fortymile Mining Association has identified particular access concerns, including R.S. 2477 rights-of-way, ANCSA 17(d)(1) withdrawals, navigability determinations of the Mosquito Fork and other tributaries of the Fortymile River, and the need for additional mining-related campsite locations near navigable waters. The Alaska Miners Association is an additional occupational organization representing interests beyond those of the Fortymile Mining District. The Alaska Miners Association has identified access and opening the Steese NCA 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 study 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. Whereas, other groups such as the miners often opposes such designations for fear of additional restrictions. The Alaska Wilderness League submitted scoping comments on the plan which were signed by six other groups. See the Eastern Interior Scoping Report (BLM 2008) which is available on the BLM's Web.

2.4.2.2. Attitudes and Beliefs

The estimated population of Alaska in 2007 was 676,987 persons. The state encompasses approximately 365 million acres, resulting in a population density of less than two persons per 1,000 acres, after a statewide population increase of nearly eight percent from 2000 to 2007. The

population of the communities in the economic study area totaled 51,254 persons in 2007, for a similar population density for the planning area as statewide. The population in the Eastern Interior Planning Area increased 4.4 percent from 2000 to 2007. These numbers suggest relatively little pressure from population density or growth, and stable communities where neighbors know each other, except perhaps in the few larger communities. Nineteen percent of the population in Alaska is Alaska Native, which is representative of the planning area. (ADCRA 2008).

It is at the community level that 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 the villages are comparatively new, the inhabitants are on ancestral lands reaching back thousands of years. Non-Alaska Natives represent more than 90 percent of the population of Central, Delta Junction, Dot Lake, and Eagle (ADCA 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 and fishing 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. For other locals, it is similarly a lifestyle, albeit one of self-reliance that brings non-native communities together in a practical ways of interaction and mutual support.

The land defines some of the social relationships between communities. The non-Alaska Native 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. People in nearby Eagle Village, which is primarily Alaska Native, remain more closely connected to those in Fort Yukon and Chalkyitsik than in Chicken, though this may be the result of cultural rather than geographic considerations.

Other than in Fairbanks, there is concern that visitors and newcomers do not understand or appreciate the area. Newcomers are reported to bring city attitudes that do not respect others in the area, including local laws and customs. Visitors using motorized transport (boats and OHVs) may not respect others hunting or fishing an area, and motor past camps multiple times in a manner that drives away animals and fish. 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 will 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 by using inappropriate motorized transport, using the trails in the wrong season, or by 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 in the planning area.

2.4.2.3. Quality of Life

In many cases, social effects of land management decisions are described in terms of effects to quality of life, which 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. Other less tangible beliefs that could affect quality of life include individuals having a sense of control over the decisions that affect their future or the feeling that the government strives to act in ways that equitably consider all stakeholders' needs.

2.4.2.4. Socially Significant Places

The planning area is large with many socially significant places. A few of the socially significant places in the planning area are the Black River, the Fortymile, and the White Mountains. The Salmon Fork and the Black River have been identified as an important subsistence area for Chalkyitsik and throughout the Yukon Flats, described by one resident 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 miners were there before BLM got there". Fort Egbert Historical Society has committed to working with BLM in maintaining and sharing the history of the fort 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.

2.4.3. Subsistence

ANILCA was signed into law by President Carter on December 2, 1980 and established conservation and allocation mandates for subsistence uses of fish and wildlife and other renewable resources by rural residents on Federal public lands in Alaska. The term subsistence uses refers to the customary and traditional uses by rural residents of wild renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible byproducts of fish and wildlife resources taken for family or personal consumption; for barter, or sharing for personal or family consumption; and for customary trade. Subsistence, as used in this document, refers primarily to the Federal program as set forth under Title VIII of ANILCA (Subsistence Management and Use). The State of Alaska similarly defines subsistence as the customary and traditional uses of wild resources for food, clothing, fuel, construction, art, sharing and trade however, under the State constitution, all residents of Alaska are considered eligible subsistence users. This document does not encompass discussion of subsistence under the State's definition.

The State of Alaska maintained responsibility for enactment and implementation of Title VIII from 1980 to 1990. The Secretaries of Interior and Agriculture assumed management responsibilities for the mandates of Title VIII in 1990 after the Alaska Supreme Court ruled that it was in violation of the state's constitution (specifically the rural preference provisions). The case became known as *McDowell v. Alaska*, 785 P.2d 1, 10 (Alaska 1989). As a result, responsibility for management of wildlife, and fisheries in non-navigable waters, on federally managed land in Alaska including National Conservation Units (NCUs) and Federal public lands, was assumed by the Secretaries. The 1995 *Katie John v. US* (95 C.D.O.S. 9660) decision on extension of Federal subsistence management to include jurisdiction over navigable waters within and adjacent to NCUs was implemented in 2001. Within the planning area, BLM administers the following

NCUs: the Fortymile NWSR, Steese NCA, Birch Creek National WR, White Mountains NRA and Beaver Creek National WR.

The provisions under Title VIII of ANILCA provide for a continuation of the opportunity for subsistence uses by rural resident of Alaska. Section 810 (Subsistence and Land Use Decisions) requires that the head of the Federal agency that has primary jurisdiction over public lands must evaluate the effects on subsistence for any withdrawal, reservation, lease permitted use, occupancy or disposition of those public lands. If any of the above listed actions are determined to significantly restrict subsistence uses, Section 810 requires the agency to minimize adverse impacts upon subsistence uses and resources and comply with a number of procedural requirements in order to proceed with the proposed action.

ANILCA further provides that the taking on public lands of fish and wildlife for nonwasteful subsistence uses shall be accorded priority over taking on such lands for other purposes. When necessary to restrict taking in order to assure the continued viability of a fish or wildlife population or the continuation of subsistence uses of such populations, Section 804 outlines criteria that implement a subsistence priority through limitations on uses evaluated through the following criteria: 1) customary and direct dependence upon the population as the mainstay of livelihood; 2) local residency; and 3) the availability of alternative resources. This is often defined as a customary and traditional (C&T) use determination; which can be applied when a need to restrict take is determined. The Federal Subsistence Board (FSB) has determined that there is C&T use of specific resources in some areas and only those communities or areas with a positive determination can participate in harvesting those resources for subsistence uses. In many areas, a C&T use determination for specific resources has not been made and therefore, all rural residents are eligible to participate in subsistence activities.

Each Federal land management agency has a responsibility for providing the opportunity for rural residents engaged in a subsistence way of life to do so. Utilization of public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the land's resources (Section 802). To carry out the responsibility for subsistence management, the Secretaries of the Interior and Agriculture established the Federal Subsistence Program, which is housed within Fish and Wildlife Service (Alaska Regional office). The FSB, ten Regional Advisory Councils (RACs) and interagency staff specialists comprise the program. The FSB consists of the State or Regional Directors of the BLM, Fish and Wildlife Service, National Park Service, Forest Service, Bureau of Indian Affairs, and a Chair from the user public representing the Secretary of Interior. The FSB oversees the Federal Subsistence Management Program and sets bag limits, seasons, methods and means and other regulatory decisions after considering recommendations from the RACs, biologists, anthropologists and land managers. The RAC region that overlaps with the planning area is the Eastern Interior and is referred to as the Eastern Interior RAC.

Section 811 ensures reasonable access by rural residents to subsistence resources on Federal public lands. The appropriate use of snowmobiles, motorboats, and other means of surface transportation "traditionally employed for such purposes by local residents, subject to reasonable regulations" is allowed.

ANILCA does not define the meaning of rural resident. Rural means any community or area of Alaska determined by the FSB as meeting the criteria of rural. Federal subsistence regulations, which apply only on Federal public lands, define a resident as a person who has their primary, permanent residence for the previous 12 months within Alaska. Factors demonstrating the

location of the primary, permanent home are defined in regulation and include the address on voter registration, tax documents, and driver's license. A seasonal resident does not qualify. These definitions are codified in 50 CFR Part 100 and 36 CFR Part 242 and summarized in the annual Subsistence Management Regulations booklets. Federal lands, as defined by ANILCA, are "lands the title to which is in the United Sates after the date of enactment of this Act." Public lands are any lands situated in Alaska that are consistent with the definition for Federal lands but do not include valid land selections of the State of Alaska or selections made under the ANCSA.

Within the borders of the planning area, the Fairbanks North Star Borough was determined to be a predominately non-rural area. Residents of all other areas and communities are designated as federally qualified subsistence users. Eighteen recognized villages are within or immediately adjacent to the planning area and qualify as rural: Chalkyitsik, Fort Yukon, Birch Creek, Beaver, Steven's Village, Livengood, Circle, Central, Healy Lake, Delta Junction, Dot Lake, Tanacross, Tok, Tetlin, Northway, Eagle, Village of Eagle, and Chicken.

Part or all of the following Game Management Units (Units) are within the planning area: Units 12, 20B, D, E, and F, and 25B, C and D. Most BLM managed lands within the planning area are in Units 20E and 25B and C. Each Unit has multiple species, multiple populations, extensive commercial, sport and subsistence users, including multicultural users, and inter- and intra-community competition for sometimes limited subsistence resources. See the Wildlife, Fisheries and Vegetation sections of this report for descriptions of wildlife, fish, and vegetation in the planning area.

2.4.3.1. Indicators

BLM policy directs the agency to: incorporate its Alaska Land Health Standards and Guidelines in land use plans and land management decisions and; use the standards and guidelines to develop specific objectives and outcome indicators in the plans (IM-AK-2004-023). There are five Standards by which the diversity and ecological health of BLM managed land is measured, including a locally important species standard.

The document provides possible success indicators that help evaluate whether the standard is being met. The indicators include distinctive physical and biological elements that describe a healthy ecosystem and are not used to evaluate current land use. Success indicators are relative for any given landscape but are all based upon an ability to provide the essential habitat elements for plant and animal species, populations and communities. BLM uses these indicators to monitor the resource trends toward or away from the standard. Traditional knowledge of an area can also provide information on trends, both historic and current.

The goal for the locally important species standard is to ensure that habitats support healthy, productive, and diverse populations and communities of native plants and animals, including those used for subsistence. Species of Local Importance is defined as species of significant importance to Native American populations (e.g., medicinal and subsistence plant and animals).

The desired condition (objective) for this standard is that habitat elements essential for those species, populations and communities are present and available to the extent they are consistent with the potential/capability of the landscape. Indicators of successfully meeting the standard include: species composition, distribution, productivity and population trends, habitat distribution, connectivity and structure, and fire history.

IM-AK-2004-023 provides guidelines for achieving objectives and fulfilling the fundamental physical and biological attributes that define land health. These guidelines offer guidance for management of public lands that will help meet current and anticipated climatic and biological conditions while considering cultural and local economic needs. For example, management practices will consider protection and conservation of plant and animal populations of significance; fish and wildlife will be maintained and protected, and the habitat needs of fish and wildlife resources necessary to maintain or enhance such populations will be provided. Implementing guidelines that maintain ecosystem health serves simultaneously to help satisfy requirements of ANILCA Title VIII which declares its purpose is to provide an opportunity for rural residents engaged in a subsistence way of life to do so; and that utilization of public lands in Alaska is to cause the least adverse impact possible on rural residents who depend on subsistence uses of resources on public lands.

Guidelines are also offered for public or agency involvement or coordination. For example, when setting deadlines for public participation, the increased time required for mail to reach rural Alaska and the seasonality of subsistence dependent communities and the land users will be considered.

2.4.3.2. Current Condition

Several important subsistence resources are found within the planning area. Most notable of these are caribou, moose, and Chinook and chum salmon. Many other resources, such as wood, berries, bears, and other furbearers, are also important.

BLM managed lands occur in large tracts in Unit 25C (Steese NCA and White Mountains NRA) and to a lesser extent in Unit 25B (Black River). These areas are large enough to contribute to the sustainability of some subsistence resources. BLM public lands (as defined by ANILCA) in the Fortymile area are concentrated along the Fortymile NWSR corridor and do not substantially contribute to the sustainability of subsistence resources. Many of the selected lands within the Fortymile area are priority selections for Doyon or the State and are likely to be conveyed in the next few years. State selected lands within the Upper Black River subunit are not a priority and will most likely remain under BLM management.

Current subsistence harvest levels of wildlife, fish and other resources in the planning area are sustainable. Although it is difficult to measure, based on discussions at Eastern Interior RAC and other meetings, subsistence needs, by rural residents in the planning area are not being met, particularly for salmon and moose. The Steese NCA, White Mountains NRA, and Fortymile NWSR are accessible by major highways and a system of trails. Harvest pressure on the most accessible areas can be very high from subsistence users and other hunters. Currently, BLM, the FSB, and rural residents in the planning area, in partnership with other Federal agencies and ADF&G, provide for harvest (quotas) of some subsistence resources (mainly caribou) at threshold levels, which are determined jointly and based on decades of past use by rural residents. Threshold levels are those at which the Federal subsistence user is able to harvest the minimum resources to reasonably subsist. For rural residents qualified to hunt caribou in Units 20E and southern 25C, that threshold level has been determined to be about 150 animals.

2.4.3.3. Trends

Harvest pressure by subsistence users in the planning area has remained consistent, with some fluctuations over the 28 years since ANILCA was passed. Census data indicate that most populations in the rural areas have not changed significantly over time. The exceptions are

Central, which has increased from 28 residents in 1960 to 134 in 2000; Fort Yukon with 109 in 1880 and 595 in 2000 (with a peak of 701 in 1960); and Tok with 129 residents in 1960 and 1,393 in 2000 (ADCRA Alaska Community Database 2008). These changes in the rural population are not great enough to substantially affect pressure on subsistence resources.

Subsistence users target the same resources other harvesters use, including non-rural residents. Fairbanks and the Fairbanks North Star Borough have grown steadily since population census for the area began. Since 1950, Fairbanks has increased by 524% (5,771 to 30,224) and the Fairbanks North Star Borough by 430% (19,409 to 82,840). Many of the non-rural residents of these areas harvest fish, wildlife and other resources in the same areas as do subsistence users. Census records for rural areas range from 1 year of data (Chicken and Livengood) to 12 years of data (Ft Yukon). The average number of census data points for rural areas is 6 years. Trends in abundance and distribution of subsistence resources have been variable. This is discussed in more detail in the Key Features section below and in section 2.1.8 Wildlife.

2.4.3.4. Forecast

Future changes in demand and often unpredictable fluctuations in populations or distribution of subsistence resources make it difficult to predict the sustainability of subsistence opportunities in many areas. In this section, possible changes in resource availability and use are considered given the current resource management situation. Stochastic events, such as drought, severe winters, and climate shifts, and changes in demand for allowable land uses, such as increased gold mining activities spurred by favorable gold prices, can affect resource distribution and availability.

The price of fuel also determines the level of participation in subsistence activities, as this influences how far rural residents can afford to travel to harvest resources but also increases the cost of bringing groceries and other resources to remote communities. Rural residents may increase harvest pressure in local areas to reduce fuel usage while continuing to offset the cost of importing groceries to the communities, especially those not connected by road. Fuel prices can be several dollars a gallon higher in rural areas than in Fairbanks and along major highways (see NonMarket Values of Subsistence Resources and Activities).

If construction of a natural gas pipeline from the North Slope of Alaska to Canada goes forward, the associated economic activity may result in a temporary, yet relatively substantial population increase in Tok and other rural villages along the Richardson and Alaska Highways. Once established as qualified rural residents after 12 months, new residents would be eligible to hunt and fish under Federal Subsistence Regulations and would likely increase the pressure on the area's subsistence resources. Increasing demands on limited subsistence resources, such as the Fortymile Caribou Herd, could result in diminished opportunities overall for state and Federal subsistence users.

Once conveyances are complete and land that is selected but not conveyed is relinquished, more Federal public land will be available to Federal subsistence users in the Fortymile and Upper Black River subunits. This is unlikely to substantially change opportunity or place significantly greater demands on resources since, with very few exceptions, state and Federal seasons are the same and Federal subsistence users are able to harvest on these selected lands under state hunting and fishing regulations. Lands conveyed to Doyon are likely to be open for subsistence by local rural residents under state regulations. Most Doyon selected lands are within the Fortymile subunit. If Doyon limits access to their land after conveyance, some rural residents who currently can legally hunt on these selected lands may not be allowed to harvest resources in these areas in the future.

2.4.3.5. Key Features

Three caribou herds range within the planning area, the Fortymile Caribou Herd (FCH), Porcupine Caribou Herd (PCH) and the White Mountains Caribou Herd (WMCH). Adjacent caribou herds are also used by residents of the area, such as the Macomb, Mentasta, and Nelchina herds. Animals from these herds occasionally travel into the planning area but usually not on lands managed by BLM.

The FCH range includes the north and south units of the Steese NCA and the Fortymile NWSR. The FCH is the most important subsistence resource within that area. The herd population is currently estimated to be about 39,000 and is considered stable to slightly declining (Gross, pers. comm. 2008). Efforts to allow for growth in the herd and recovery into traditional range were initiated in 1995 through a collaborative management planning process. During implementation of the plan (1996-2001), the herd increased by 78%. Typically, Fortymile caribou spend the critically important calving and post-calving seasons outside of lands managed by BLM. However, some mineral exploration activity has been permitted by BLM near the calving and post-calving range on Native-selected lands within Unit 20E. Future mineral development adjacent to calving areas may potentially affect calving distribution or success. Important fall and winter habitat for Fortymile caribou is in Steese NCA.

Much of the Federal subsistence harvest of Fortymile caribou occurs in the Steese NCA (Unit 25C), where all rural residents of Alaska are eligible to harvest caribou. Some harvest occurs on BLM lands in the Fortymile area (Unit 20E), mostly near American Summit. Only rural residents of Units 12 (north of Wrangell-St. Elias National Park and Preserve), 20D and 20E are eligible to participate in the Federal subsistence harvest of caribou in this area.

The WMCH range includes the White Mountains NRA and the north unit of the Steese NCA (Unit 25C). The WMCH is estimated at about 400 animals and is considered to be declining. The WMCH and FCH mix in the north unit of Steese NCA in the Preacher Creek drainage during late fall and winter. Some White Mountains caribou may be harvested by federally qualified subsistence hunters in the north Steese during that time and counted as FCH harvest. White Mountains caribou are generally in areas that are difficult to access. Over the past 20-30 years harvest data indicate that little to none of the harvest from this herd has been by federally qualified subsistence users. It is difficult to confirm rural harvest because the fall season is conducted on a harvest ticket; only the winter hunt is conducted by a permit. All rural residents of Alaska qualify as Federal subsistence hunters for caribou in Unit 25C.

The Upper Black River is within the boundaries of the PCH range. The herd size is currently estimated to be between 110,000 to 115,000 animals (Lenart 2007). State and Federal seasons and bag limits have been generous for many years, with seasons from 1 July – 30 April and limits of 10 caribou since at least 1991. A cooperative study on PCH seasonal distribution was initiated between Alaska and Yukon agencies in 1998. Over the 10 years of the study, few of the satellite-collared caribou from this herd have been detected near the BLM-managed lands in the Black River drainage. [In four of the ten years 1-2 collared cows from the PCH were found north of the Yukon River near Eagle, Alaska or on the border during December 1 to March 31. During spring migrations (April 1 to May 31), 1 collared cow was in the area three out of the ten years. One to two collared cows were detected north of the Yukon River near Eagle in three of 10 years during rut and late fall (October 8 to November 30)].

Calving and post-calving are the seasons when caribou are the most sensitive to disturbance and require the highest quality habitat and conditions. For the PCH, this includes the periods of June 1-10 and June 11-30, respectively. Historically, the PCH has spent these periods on or very near to the Arctic coastal plain in the Arctic NWR in Alaska and Ivvavik National Park in northern Yukon. It is likely that over the 10 years of the study some PCH spent part of the winter in or near the Black River area or migrated through the area. Caribou use areas can change over time and this area may have been or may become more important to this herd, due to stochastic events such as weather or fire, or long term disturbance of land. All rural residents are eligible to harvest caribou in Unit 25B. Reports on the harvest of caribou by Upper Yukon-Porcupine communities in the Black River documents use by Chalkyitsik residents, however it is likely the residents of Fort Yukon and other subsistence hunters also occasionally harvest caribou in the Black River area.

Moose are an important subsistence resource throughout the planning area. Populations within Unit 25C, which includes the Steese NCA and White Mountains NRA, have been low for many years. Harvest in 25C is considered a minor factor affecting population dynamics relative to other factors. All rural residents qualify to harvest moose during Federal subsistence seasons in Unit 25C. Most moose harvested under Federal subsistence seasons in this area are by local residents. Harvest administration is through the use of a harvest ticket making it difficult to break down harvesters into rural or non-rural categories. Residents of Fort Yukon and Birch Creek traditionally have harvested moose along Birch Creek and Preacher Creek but generally farther downstream in what is now the Yukon Flats NWR (Unit 25D).

The moose population in Unit 20E, which includes the Fortymile NWSR, remains at low densities. Research conducted in the Unit concluded that harvest was not a substantial limiting factor. Due to low densities but high demand, a registration permit is required. For most of the past eight seasons, a non-rural resident is issued a permit for either a moose or caribou. Once that harvest portion of the permit is returned to ADF&G, a permit for the other species can be issued. Rural residents can hold a registration permit for FCH and moose at the same time. Harvest of moose is generally low and primarily by rural residents.

Moose populations have historically been at low densities in the Black River area (Unit 25B). Population trends in the Unit have not been studied rigorously but indications are that the populations are declining. Residents of Chalkyitsik and Fort Yukon probably hunted traditionally on lands in the Upper Black River subunit. Use of these areas likely fluctuates as fuel prices increase and rural residents hunt closer to home. Availability of wildlife for harvest is likely to decline close to villages for this reason.

Dall Sheep are not considered to be subsistence species in the planning area and there are no Federal seasons for this species. A band of Gwich'in people reported to live in the foothills of the White Mountains in the early 1900s probably harvested sheep in the vicinity of Victoria Mountain (Caulfield 1983). Caulfield (1983) also reports that the Dr'aanjik Gwich'in (people of the Salmon Fork and Black River) hunted sheep in the headwaters of the Black River in the winter. Most harvest of sheep by rural residents within the Black River subunit occurs off BLM managed lands in the Brooks Range, according to reports on more recent uses (Caulfield 1983).

Trapping occurs on many BLM managed lands within the planning area. Based on studies conducted by the ADF&G, Division of Subsistence, and personal communication with subsistence users, subsistence trapping has been consistently practiced in areas north of Tok by many Upper Tanana communities (Marcotte 1991). The trapping areas include the Mosquito Flats, and West Fork and Middle Fork of the Fortymile NWSR. Many residents of Eagle and the Village of

Eagle trap and some trapping effort may occur on scattered BLM-managed lands near villages. Residents of Chalkyitsik and Fort Yukon have historically trapped upstream on the Black River, extending just onto BLM managed lands (Caulfield 1983). Although several trap lines in the White Mountains NRA are run by non-rural residents, trapping by rural residents is not known to occur there. At least one rural trapper is known to run lines in the Steese NCA (B. Glanz pers. comm.).

Suitable habitat for waterfowl is sparse on BLM managed lands within the planning area. Most waterfowl hunting is conducted in areas off BLM-managed lands.

Subsistence users harvest fish from the many lakes and streams within the planning area. Salmon are considered the most important subsistence fish resource, although sheefish, whitefish, pike and other species are harvested. Most of the directed salmon fishing is done in the main stem of the Yukon River. Residents of the Upper Tanana region harvest little or no salmon, as salmon are typically found only downstream of the Delta River (Haynes et al 1984, Case 1986, Halpin 1987, Marcotte 1991). Salmon are very important to Stevens Village, Beaver, Birch Creek, Eagle and the Village of Eagle (Andrews 1986, Caulfield 1983). The Salmon Fork of the Black River is a significant spawning area for chum, Chinook and coho salmon and is important for Yukon River salmon production. The Salmon Fork is largely surrounded by public lands managed by BLM. It may be appropriate to consider this area for special protection or designation, such as an area of critical environmental concern (ACEC) for spawning salmon. During scoping, this area was nominated by the public as an ACEC for salmon spawning and other values.

Currently there are no subsistence harvest limits for salmon or freshwater species, such as sheefish, whitefish, lamprey, burbot, suckers, northern pike, char or blackfish. Subsistence harvest limits are in place only for Arctic grayling in the Beaver Creek drainage. Navigable waters on BLM-managed lands outside of Conservation System Units (CSUs) are not open to Federal subsistence fishing. Federal subsistence users harvesting fish from these waters do so under State fishing regulations.

Subsistence use of vegetative and forestry resource is variable but generally occurs close to rural communities. Berries are locally abundant and can be greatly influenced by stochastic events, such as fire, drought, or availability of pollinators. Harvest of timber for house logs and firewood requires a free use permit, although for the rural resident harvest of timber would be considered subsistence (unless it was sold for profit). Efforts to allow harvest of timber for subsistence use without a permit are being pursued by some rural communities and may result in new BLM policy.

More detailed information on caribou and other subsistence resources is included in section 2.1.7 Wildlife and 2.1.5 Fish of this document.

2.4.3.6. Communities of Place (Qualified Subsistence Communities)

The subsistence lifestyle is a traditional way of life for many Alaskans. Subsistence includes the gathering, harvesting, processing, distribution and consumption of vegetative, fish and game resources. For many Alaskans, particularly Alaska Natives, subsistence is a connection with the land, environment, people and resources, and defines their culture. Eighteen recognized villages are within or immediately adjacent to the planning areas and qualify as rural: Chalkyitsik, Fort Yukon, Birch Creek, Beaver, Steven's Village, Livengood, Circle, Central, Healy Lake, Delta Junction, Dot Lake, Tanacross, Tok, Tetlin, Northway, Eagle, Village of Eagle, and Chicken.

Section 804 of ANILCA has been used by the FSB to provide a local preference for subsistence uses by rural residents. These are termed customary and traditional (C&T) use determinations and are passed as regulations and codified in the Code of Federal Regulations (36 CFR Part 242 and 50 CFR Part 100) and the Federal Register. Local preferences dictate who is eligible to harvest an area's subsistence resources. C&T determinations are summarized in the in the Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in Alaska booklet. Only rural residents from Units 20D, 20E and 12 (north of Wrangell St. Elias National Preserve) have a positive C&T use determination for caribou in Unit 20E (Fortymile Subunit).

Rural residents of Units 20E and 12 (north of Wrangell St Elias National Preserve) and the villages of Circle, Central, Dot Lake, Healy Lake and Mentasta Lake are the only rural residents to have a positive C&T determination for moose in Unit 20E. However, all rural residents of the state of Alaska have a positive C&T use determination for caribou and moose in Unit 25B (Black River Subunit) and 25C (White Mountains Subunit and Steese Subunit). Therefore, any federally qualified rural resident, including residents of areas or villages other than those listed as within or immediately adjacent to the planning area, may participate in these hunts. (Residents of the Fairbanks North Star Borough are not considered rural residents under ANILCA and therefore are not eligible to hunt under Federal subsistence regulations). Additionally, some resources, such as caribou and salmon, are migratory and land use actions within the planning area may affect the availability, distribution or abundance of fish and wildlife for communities well outside the planning area.

2.4.3.7. Significant Places and Areas (Subsistence Use Areas)

Few data are available describing locations or areas that are significant for subsistence use. ADF&G, FWS, Office of Subsistence management, and some village councils or other organizations (Council of Athabascan Tribal Governments) have developed maps of subsistence use areas. Many of these maps were developed during preparation of technical reports by the ADF&G, Division of Subsistence and represent a snapshot of use areas during a specific time or may represent historic use areas. Resource distribution and subsistence use areas change over time and these maps should be viewed as the minimum use areas. Important use areas may be outside the areas shown on the maps. Information on subsistence use areas gathered during the planning process are important for this reason. Discussion of significant places and areas will be developed in the effected environment sections of the draft RMP/EIS.

2.4.3.8. Non-Market Values of Subsistence Resources and Activities

Hunting and gathering of fish, wildlife and vegetative resources has a value that extends beyond economic valuation for many individuals and communities in and adjacent to the planning area. For many communities, hunting and gathering are part of the culture and tradition of the people and these customs have been maintained over generations. The timing of activities are often seasonally based, dictated by the availability and location of subsistence resources. During the 1940s-1960s, many villages became permanent, year round bases (Case 1986, Caulfield 1983, Martin 1983). Often this coincided with the advent of village schools and corporations (Caulfield 1983). More recently, village based employment, school schedules, and hunting, fishing and trapping regulations and have influenced the timing of subsistence activities as well (Case 1986).

Seasonal rounds or cycles of subsistence use have been described in the literature for some villages in the planning area. Most of the available literature is comprised of technical reports

written by the ADF&G, Division of Subsistence. These reports cover subsistence use in communities for a specific, often contemporary, period of time, as short as 12 years in some studies. Other reports include information on seasonal rounds and use areas that are recalled and described through oral tradition.

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. The Dr'aanjik Gwichi'in, the people living along the Salmon Fork and main stem of the Black River, moved to the headwaters of the Black River in the winter to snare moose, hunt caribou and sheep and trap (Caulfield 1983). Trapping most often occurs in the winter because of the prime condition of pelts during the cold months.

Traditionally, people of the upper Yukon River move to fish camps in July when salmon begin running upstream. A second pulse of activity at fish camps begins during mid-August for communities that harvest fall runs of chum salmon, for example Birch Creek (Andrews 1986). Fall chum salmon is the major fish species used by residents of the upper Yukon (Andrews 1986). Fishing for whitefish and pike begins after spring break-up (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). The customs and traditions within and between the planning subunits is rich and varied. Seasonal availability of resources, whether due to migration or the short daylight and cold of winter allowed for quieter times when cultural events developed and took place. Many of these continue to be sharped by reliance on wild resources.

2.4.3.9. Subsistence Activities

Subsistence use of fish and wildlife and other renewable resources is discussed under the Key Features section above. This section covers other factors that affect or drive subsistence activities.

Wage employment opportunities are very limited in most villages (Caulfield 1983, Martin 1983). Therefore, 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 and 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. Barter, sharing, and customary trade are recognized by ANILCA and provided for in Federal regulations.

Resources are not equally available to all rural residents. 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 often higher than in hub communities. Some of the villages are on the Alaska Highway and fuel prices there are closer to those of Fairbanks. During June 2007, gasoline in Delta Junction was $.12 per gallon higher than Fairbanks (Grewe and Caldwell 2007). Communities on less traveled roads, such as the Steese and Taylor Highways, experience even higher fuel prices. Gasoline at the time of the Grewe and Caldwell (2007) study was $.91 per gallon higher in Circle and $.86 per gallon higher in Eagle. Villages accessible only by air experienced prices over twice the per gallon cost in Fairbanks. No prices for Chalkytsik were listed however, prices for Arctic Village, which is similar in its remoteness, were $4.11 per gallon higher than in Fairbanks. These are the villages that have the most dependence on subsistence hunting and gathering. As early as March 2007 at meetings of the Eastern Interior RAC in Arctic Village, 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 (FWS 2007b). Cost of gasoline has become a major factor in how far subsistence hunters can travel to catch animals and gather resources.

Access to subsistence resources is also influenced by the proximity of Federal lands on which to harvest resources. In some areas, there is little Federal land within reasonable traveling distance of some communities. Dot Lake, Tok, Tanacross, and Delta Junction residents must travel up to 100 miles to reach areas where Federal subsistence 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. As discussed above in Section 2.4.3.4 Forecast, the amount and distribution of Federal public land will change somewhat once land conveyances are completed.

2.4.4. Environmental Justice

Environmental justice is an initiative that culminated with President Clinton's February 11, 1994, EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and an accompanying Presidential memorandum. The EO 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 EIS 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 Indian Tribes, and minority and low-income populations.

2.4.4.1. 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 (Pub. L. 103–454; 108 Stat. 4791, 4792). The Eastern Interior Planning Area includes 12 federally recognized tribes, including:

- 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 US EPA's Environmental Justice guidance of July 1999 stresses the importance of government-to-government consultation. The BLM initiated consultation with the federally recognized tribes in the Planning Area by certified mail at the beginning of the planning process. A second letter was sent out near the end of the formal scoping period. At the date of this report, one tribe responded, stating that they wish to participate in consultation and 11 tribes did not respond at all.

2.4.4.2. 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. Local governments in the Eastern Interior Planning Area include the Fairbanks North Star Borough, several second class cities, and numerous unincorporated cities. Table 2.20 lists all of the communities within the planning area by municipality type, population, and percentage of the population that is a recognized minority (2000 US Census). Population figures in this table may be slightly different than those listed under section 2.4.1 as different sources of data were used.

Table 2.20. Minority Populations in the Planning Area

Borough/Community	Government Type	2000 Population	% Minority
Fairbanks North Star Borough	Second Class Borough	82,840	22.2%
Beaver	Unincorporated	84	95.2%
Big Delta	Unincorporated	749	4.5%
Birch Creek	Unincorporated	28	100.0%
Boundary (Alcan Border)	Unincorporated	21	33.3%
Central	Unincorporated	134	15.7%
Chalkyitsik	Unincorporated	83	97.6%
Chicken	Unincorporated	17	0.0%
Circle	Unincorporated	100	86.0%
Delta Junction	Second Class City	840	9.4%
Deltana	Unincorporated	1,570	8.4%
Dot Lake	Unincorporated	19	15.8%
Dot Lake Village	Unincorporated	38	81.6%
Eagle	Second Class City	129	7.0%
Eagle Village	Unincorporated	68	44.1%
Fort Yukon	Second Class City	595	89.2%

Borough/Community	Government Type	2000 Population	% Minority
Healy Lake	Unincorporated	37	73.0%
Livengood	Unincorporated	29	17.2%
Northway	Unincorporated	95	82.1%
Northway Junction	Unincorporated	72	58.3%
Northway Village	Unincorporated	107	98.1%
Stevens Village	Unincorporated	87	96.6%
Tanacross	Unincorporated	140	91.4%
Tetlin	Unincorporated	117	97.4%
Tok	Unincorporated	1,393	22.0%
U.S. Census Bureau; Census 2000, Summary File 1; generated by Stacie McIntosh; using American FactFinder; http://factfinder.census.gov; (08 August 2008)			

Given the isolated nature of the communities located in the planning area, each borough or community that has a % minority population greater than 50% will be assessed for disproportionately high adverse effects in evaluating the effects of the planning area alternatives. Based on the census data, numerous minority populations within the planning area are well above the 50% threshold specified in the EPA guidelines. In the Fairbanks North Star Borough, the largest population center within the planning area, 23.3% of the population is minority. Of this 22.2%, 6.9% identify themselves as Alaska Native/American Indian, 5.8% as Black, 2.1% as Asian, 0.3% as Native Hawaiian or Other Pacific Islander, 1.7% as some other race, and 5.4% as a combination of one or more races. In addition, 4.2% of the residents of the Fairbanks North Star Borough identify themselves as Hispanic regardless of race. In all of the other planning area communities where the % minority is greater than 50%, the minority population is primarily composed of Alaska Native/American Indians, with little to no other minority groups represented.

2.4.4.3. Low-Income Populations in the Planning Area

Low-income populations in an affected area 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% 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% 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, 18 communities within the planning area are considered low-income. These are shown in bold in Table 2.21 below.

Table 2.21. Low income communities within the Eastern Interior Planning Area

Community	% Individuals below Poverty Level
Beaver	11.1%
Big Delta	30.0%
Birch Creek	37.0%
Boundary (Alcan Border)	0.0%
Central	22.5%
Chalkyitsik	52.6%
Chicken	0.0%
Circle	42.0%
Delta Junction	19.4%
Deltana	15.1%
Dot Lake	5.6%

Community	% Individuals below Poverty Level
Dot Lake Village	19.0%
Eagle	16.5%
Eagle Village	55.7%
Fort Yukon	18.5%
Healy Lake	9.1%
Livengood	15.4%
Northway	21.1%
Northway Junction	15.8%
Northway Village	25.0%
Stevens Village	61.2%
Tanacross	33.3%
Tetlin	48.4%
Tok	10.5%
U.S. Census Bureau; Census 2000, Fact Sheets; generated by Stacie McIntosh; using American FactFinder; http://factfinder.census.gov; (08 August 2008)	

For the largest population center within the planning area, the Fairbanks North Star Borough, individual census areas or communities will be identified in order to determine potential pockets of low-income populations. Any community located within the borough will be considered low-income if they are greater than the national average of 12.4%. As indicated in Table 2.22 below, all 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 2.22. Low income communities within the Fairbanks North Star Borough

Borough/Community	% Individuals below Poverty Level
Fairbanks North Star Borough	7.8%
Ester	8.1%
Fairbanks	10.5%
Fox	8.7%
Harding Lake/Birch Lake	0.0%
Moose Creek	9.4%
North Pole	8.7%
Pleasant Valley	7.0%
Salcha	3.9%
Two Rivers	0.0%
U.S. Census Bureau; Census 2000, Fact Sheets; generated by Stacie McIntosh; using American FactFinder; http://factfinder.census.gov ; (08 August 2008)	

2.4.4.4. Outreach and Potential Environmental Justice Issue Identification

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 Anchorage, Fairbanks, Central, Chalkyitsik, Chicken, Delta Junction, Eagles and Tok. Environmental justice considerations for the RMP were also 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 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, allowing the natural fire regime to continue, problems as a result of erosion after 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 cabin to be constructed, and allowing for the reconstruction f trapping cabin that have burned down due to wildfires;
- Continued trail improvement throughout the planning area;
- The protection of subsistence resources, including the Fortymile caribou, moose, salmon, whitefish and pike.

2.4.5. Hazardous Materials

The Eastern Interior planning area has two currently managed contaminated sites: Fort Egbert Dump in Eagle, Alaska and Tanacross Airfield and Administrative Site, near Tanacross. These areas have been identified as a priority in accordance with state and Federal regulations governing the cleanup of contaminated sites and are described below. Hazardous materials on Federal lands may slow the conveyance of land and could have the potential to limit or restrict land use. A plan for contaminated sites cleanup is important to BLM to ensure the safety and health of Federal lands in the future.

2.4.5.1. Remediation of Contaminated Sites

Fort Egbert Dump

The Fort Egbert Dump (CERCLIS ID – AK9141132317) is located immediately adjacent to the City of Eagle along the Yukon River. The legal description of the Fort Egbert Dump is a Portion of Lot 1, U.S.S. 4033, Alaska. It is located at Latitude 64º47’27.36” north and Longitude 141º11’16.68” west. The dump site is located within the Fort Egbert grounds, a National Historic Landmark listed on the National Register of Historic Places as part of the Eagle Historic District. The area of concern within the dump is modern (since the 1940’s), although the general locale, a bluff edge to the north of the eastern end of the Parade Grounds (airstrip), had been used as a refuse disposal area since historic times. The historical dump was started about 1899 when Fort Egbert was established and used by the Army until about 1925. Historical refuse is found along an approximate 0.5 mile stretch of bluff between the fort buildings and Mission Creek, a tributary of the Yukon River.

The dump was unauthorized and was closed by BLM in 1989. There has been no evidence of public use since the closure. Currently there are wooden posts along the top of the bluff, restricting access to the dump site. The dump is an area of concern and the “modern” section is scheduled for

removal in the summer of 2009. The dump contains household wastes, batteries, old appliances, vehicle parts and a variety of other known source contaminants. Due to the location of the dump and drainage into the wetlands of Mission Creek it is important to remove the area of concern and dispose of wastes within the dump properly to minimize future land and water impact.

Tanacross Complex

The Tanacross complex (CERCLIS # 7141190085) is comprised of two locations, one on either side of the Alaskan Highway (Route 2). The Tanacross Airfield Site (TAS) is located on the south bank of the Tanana River 11 miles northwest of Tok, Alaska and 167 miles southeast of Fairbanks, Alaska. The geographic coordinates for the airfield (at the intersection of the runways) are Latitude 63º22'28" north and Longitude 143º20'06" west. The TAS is located in Township 18 North, Range 11 East, Copper River Meridian. It occupies approximately 1,601 acres.

Since the early 1900s, the TAS has been utilized by numerous entities including, the military, Civil Aviation Authority (a precursor to the Federal Aviation Administration), BLM and the Alaska Department of Transportation and Public Facilities. The TAS became the responsibility of BLM in the 1960s. BLM Alaska Fire Service constructed numerous buildings in the late 1970s, for use with the Youth Conservation Corps and subsequently the Young Adult Conservation Corps, along the west side of the original access road near the Village of Tanacross. These buildings are still present. From 1980 to the present, Fairbanks Racing Lions, Porsche Club of America and Alaska Sport Car Club have been permitted to use the airfield annually for races.

On October 9, 1987 ADEC sent a letter requesting BLM report on the asphalt barrels and the fuel spill cleanup and disposal plans. In 1989, the EPA requested a Preliminary Assessment site investigation under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) from BLM, and the site was assigned CERCLIS # 7141190085. In July 1992, the BLM took soil samples to determine the extent of contamination. In 1993, BLM began a water sampling program to determine the extent of groundwater contamination on-site. In 1996, ESI (a contractor) removed Jet B fuel spill stock piles that were located northwest of the former maintenance area and installed two vents to approximately 10 feet below ground surface (bgs). In the summer of 1997, 14 monitoring wells were drilled on BLM property after a site assessment identified the flow of ground water and possible routes contaminants could be carried if they were to reach the water table. Seven of these wells were drilled on the TAS. The wells are monitored by contractors with ADEC and EPA guidance. Known underground fuel storage tanks were removed, samples taken, contaminated soil removed and the storage tank site was filled with clean gravel. In March 1999, numerous samples were taken at the end of the runway along the Tanana River. The results exceeded clean up levels determined by ADEC. Lead was detected at 0.075 ppm exceeding groundwater cleanup criteria of 0.05 ppm.

The Alaska Department of Forestry has a right-of-way with BLM for use of the runway, storage of fire retardant and fuel for fire response and training. One hanger remains on site along the southeast end of the taxiway. The hanger, built in 1977, was formerly associated with air transport operators and is tentatively scheduled for an initial hazardous site investigation to determine all hazards within the building and the immediate surrounding area in Fiscal Year 2009. Once this determination is made further remediation may be scheduled. Fuel spills, underground fuel storage tanks, landfill contaminants, maintenance facilities, fire retardant spills and possible chlorinated solvent spills are a few of the sites within the TAS that have been remediated. The airfield currently occupies BLM State selected lands. Conveyance of the Tanacross complex

could possibly be delayed by the investigation of the hanger and any other unknowns. BLM will continue monitoring and remediation in accordance with ADEC and EPA guidance.

The Tanacross Administrative Site is located along the south side of the Alaska Highway. Public Land Order (PLO) 1768 as amended by PLO 6590 withdraws 24.70 acres for a BLM Administrative Site. This parcel is currently prioritized for conveyance to the Tanacross Village Corporation. It was once a BLM administrative site with associated buildings supporting wild land fire operations at the TAS. In the 1980s, the main building burned to the ground. In September 2004, TCLP-Metals (6010B/3010A) and asbestos samples were taken at the site. Soil lead levels were below maximum contaminant levels. Chrysotile asbestos was present in four of the ten samples at levels from 2-90%. In 1997, two leaking underground storage tanks were removed. Groundwater was believed to be impacted and seven monitoring wells were installed. In 2006, asbestos abatement, debris cleanup, close out of a drinking water well and removal of an old septic tank vault was completed. BLM will continue monitoring and remediation on this site in accordance with ADEC and EPA guidance.

2.4.5.2. Contaminated Sites of Concern

The Eastern Interior planning area has numerous areas of concern generated by historical mining activities and current placer mining. Historical mines are dangerous due to the unknowns that are present at each location. Mining operations included the use of numerous hazardous materials in the past with little to no regard for the environment. A variety of petroleum, oil and lubricants, waste drums, explosive materials, equipment parts, possible military surplus items and household trash can be found at some of the locations in the Table 2.24. These sites consist of both current claims on BLM land and historical sites of concern. Remediation of these sites may occur as responsible parties are identified and sites are prioritized in accordance with the volume of waste and types of hazardous materials found on site. Some of the sites may require extensive remediation, due to the activities that may have occurred at the site.

Some of the lands in the planning area are selected by the State of Alaska or by Native corporations and may be conveyed at some point in the future. American Creek has been tentatively approved for conveyance to the State. 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 request.

Table 2.23. Contaminated sites of concern within the Eastern Interior Planning Area

SITE NAME	LOCATION	STATUS
American Creek Mine	T3S R32E section 7, FM, proposed TA to State 1/25/08	Active mining claim
Wade Creek Dump	T27N R19E, CM	
Fortyfive Pup Mine	T8S R29E, FM	Active mining claim
Fortymile River	T8S R33E, FM	Trespass
Franklin Creek Mine	T28N R18E, CM	Active mining claim
Ingle Creek Mine	T27N R17E, CM	
Little Miller Creek Mine	T6S R33E, FM	Active mining claim
Moose Creek	T7S R34E, FM	Trespass
Mosquito Fork Bridge	T26N R17E, CM	Active mining claim
Mosquito Fork Mine	T27N R17E, CM	

SITE NAME	LOCATION	STATUS
Napolean Creek Mine	T27N R19E, CM	Active mining claim
Nome Creek	T8N R5E, FM	Active mining claim
Preacher Creek	T10N R9E, FM	Trespass
Smith Bench	T7S R34E, FM	Active mining claim
Steele Creek	T7S R33E, FM	
Uhler Creek	T8S R31E, FM	Active mining claim
CM = Copper River Meridian; FM = Fairbanks Meridian		

Chapter 3. Current Management Direction

3.1. How to Read this Chapter

The first section of this chapter lists relevant plans, amendments, and special rules that govern management within the planning area. The full title of planning documents or special rules are included in Table 3.1. In the remaining sections, the titles may be abbreviated. For example, the Record of Decision and Resource Management Plan for the Steese National Conservation Area (BLM 1986a) is later referred to as the Steese ROD/RMP or the Steese RMP. The River Management Plan: Fortymile River Component of the National Wild and Scenic Rivers System (BLM 1983a) is referred to as the Fortymile River Management Plan. The RMPs and MFP are sometimes generically referred to as land use plans.

Section 3.3 discusses current management. Initially, management is discussed generically, under Management Common to All Subunits. This section is broken down by management program or resource. Some programs such as Hazardous Materials or Noxious and Invasive Species, where the existing land use plans do not have specific management direction, are only discussed under the Common to All section. Programs such as subsistence, where the decisions in existing land use plans are reflective of the general ongoing management in all subunits, are also discussed under Management Common to All Subunits.

The remaining sections of this chapter are broken down by planning subunit (Fortymile, Steese, and White Mountains) and then by management program or resource. If a particular land use plan does not address a resource or management program, it is not discussed. Existing decisions are listed, the current status is described, and a determination made if the decision is relevant to current issues in a table format. Some decisions may be listed in more than one table if applicable to more than one program. For example, some of the fisheries decisions are also pertinent to management of water resources.

Terminology has changed since development of the land use plans. Where existing decisions or management objectives are listed, the old terminology is used. In other columns in the tables or in the text, newer terminology may be used. For example, the term off-road vehicles (ORV) was used in all three existing land use plans. The current terminology is off-highway vehicle (OHV).

Where page numbers are cited in tables, they refer to the page number where the listed decision is located in the published version of either the Steese ROD/RMP (BLM 1986a) or the White Mountains ROD/RMP (1986b) depending on which source is cited in the table. Decisions in the Fortymile MFP are listed by decision number.

3.2. Relevant Plans and Amendments

The Eastern Interior Planning Area incorporates two existing resource management plans (RMPs), one statewide plan amendment, one management framework plan (MFP), and three river management plans (Table 3.1). The Steese and White Mountains RMPs, and Fortymile MFP were evaluated in 2002. The evaluations recommended that revised RMPs be developed for the Steese and Fortymile, and that the White Mountains RMP be amended.

BLM began an amendment to the White Mountains RMP in 2005. The amendment process went through the scoping phase and draft alternatives were developed. However, a draft amendment and environmental assessment were never released for public comment. Later a decision was made to develop the Eastern Interior RMP and incorporate the Steese, White Mountains, Fortymile and upper Black River under one planning effort.

The three existing plans were amended through the Fire Plan Amendment for Alaska in 2005 to update direction for wildland fire and fuels management. The three river management plans have not been amended or formally evaluated.

In addition to the existing land use plans, management is further directed through activity plans and special rules published in the Federal Register. Two activity plans, the White Mountains NRA Recreation Area Management Plan and the Steese Recreation Area Management plan were written in 1988. Activity plans for the three designated wild rivers were developed in 1983 as directed by ANILCA. Note that these river management plans were developed before the Steese and White Mountain RMPs, and some decisions in the river management plans were amended by the RMPs.

Table 3.1. List of Plans and Amendments Relevant to the Eastern Interior Planning Area

Document Title	Other relevant information
Fortymile Management Framework Plan (1980)	Evaluated in 2002. Recommended development of an RMP.
Record of Decision Resource Management Plan (ROD/RMP) for the Steese National Conservation Area (1986)	Evaluated in 2002. Recommended revised RMP.
Record of Decision Resource Management Plan for the White Mountains National Recreation Area (1986)	Evaluated in 2002. Recommended amending the plan to address OHV issues. Plan amendment started but never completed. Decision to do a plan revision.
Decision Record for the Land Use Plan Amendment for Wildland Fire and Fuels Management for Alaska (Environmental Assessment AK-313-04-EA-001) (2005)	All land use plans in Alaska were amended to update direction for wildland fire and fuels management, and for compliance with the National Fire Plan and the 2001 Review and Update of the 1995 Federal Wildland Fire Management Policy.
River Management Plan: Fortymile River, Component of the National Wild and Scenic Rivers System (1983)	ANILCA directed BLM to establish detailed boundaries and prepare management plans for these rivers by 1983.
River Management Plan: Birch Creek, A Component of the National Wild and Scenic Rivers System (1983)	
River Management Plan: Beaver Creek, A Component of the National Wild and Scenic Rivers System (1983)	
Recreation Area Management Plan: White Mountains National Recreation Area (1988)	Activity level plan developed subsequent to the White Mountains RMP
Recreation Activity Management Plan for the Steese National Conservation Area and Related Lands along the Steese Highway (1993)	Activity level plan developed subsequent to the Steese RMP; Includes lands within the NCA, Birch Creek corridor, and scattered parcels along the Steese Highway north of Chatanika River Bridge.
Special Rules and Regulations for the Steese National Conservation Area et al., (Federal Register Vol. 53, No. 131; Friday, July 8, 1988; 25696)	Applies to all lands and water surfaces in the Steese NCA, the Pinnell Mountain Trail, the Bedrock Creek Campground, and the Ketchum Creek Campground.

Document Title	Other relevant information
Designation of Off-Road Vehicle (ORV) Use Areas for the Steese NCA (Federal Register Vol. 53, No. 136, Friday, July 15, 1988)	Applies to all lands and water surfaces within the Steese NCA and the Pinnell Mountains Trail.
Designation of Off-Road Vehicle (ORV) Use Areas for the White Mountains NRA and Associated Lands (Federal Register, Vol 53., No. 136., Friday, July 15, 1988)	Applies to all lands and water surfaces in the White Mountains NRA and BLM-managed lands between the White Mountains NRA and the Steese and Elliott highways.
Modification of Designated Off-Road Vehicle (OHV) Use Areas for the White Mountains National Recreation Area and Associated Lands (Federal Register, Vol. 57, No. 54, Thursday, March 19, 1992)	Applies to lands and water surfaces within the White Mountains NRA in the Mount Prindle area. It modifies an earlier order published July 15, 1988 by reducing the size of the Foothills area and expanding the size of the Highlands area.
Notice of Special Rules and Regulations for the White Mountains NRA and Associated Facilities (Federal Register, Vol. 62, No. 178, Monday, September 15, 1997)	This notice rescinded and replaced the White Mountains Special Rules and Regulations published July 8, 1988 (53 FR 25696, July 8, 1988)
Designation of Off-Road Vehicle Use Areas in the White Mountains National Recreation Area (Federal Register, Vol. 63, No. 244, Monday, December 21, 1998)	This notice modified the Designation of Off-Road Vehicle (ORV) Use Areas for the White Mountains NRA published July 15, 1988.

3.2.1. Fortymile Management Framework Plan

The decisions for the Fortymile MFP are listed under section 3.3.2 Fortymile Subunit, by program area. The decisions listed in this section apply to the Fortymile Resource Area as defined by the MFP, which is not exactly the same area as the Fortymile Subunit as defined in the Eastern Interior RMP (Map 1.1). The Fortymile Subunit includes land within the Central Yukon Field Office (along the Alaska Highway and in the Fairbanks area) which is currently not covered by any existing land use plan.

3.2.2. Steese National Conservation Area RMP

The Steese National Conservation Area (NCA) was established by Congress through ANILCA. Special values to be considered in planning and management of the area include Birch Creek National Wild River and caribou range. Where consistent with the protection of Birch Creek and caribou range, opportunities for the multiple use of natural resources would be provided. The goals outlined in the Steese RMP (BLM 1986a) are to: improve the water quality of Birch Creek National Wild River; manage present and historical caribou habitat as a primary land use; and manage lands consistent with multiple use principles and maintenance, of environmental quality. Decisions from the Steese RMP are listed under section 3.3.3.

3.2.3. White Mountains National Recreation Area RMP

Specific authorization for the White Mountains RMP comes from ANILCA which directs that the White Mountains NRA shall be administered to provide for public outdoor recreational use and 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. The goals outlined in the White Mountains RMP (1986b) are to: provide for a variety of public outdoor recreational opportunities which emphasize the existing natural primitive and semi-primitive values appropriate to the White Mountains NRA designation; protect and maintain the water quality of Beaver Creek National Wild River; and provide for multiple use where compatible with primitive or semi-primitive recreation. Decisions from the Steese RMP are listed under section 3.3.4.

3.2.4. Upper Black River Subunit

The Upper Black River Subunit as identified in the Eastern Interior RMP is not covered by any existing land use plan. Since there has never been a RMP developed for BLM lands in this subunit, there are no current management decisions. The area is extremely remote and BLM receives few applications for use. When applications are received, they are evaluated based on Federal law and regulations. Impacts to fish, wildlife, subsistence and other resources are considered and appropriate mitigation measures are developed before approval of the application. Fish, wildlife, and cultural resource inventories and monitoring occur in the area as needed to address management concerns.

3.3. Management Decisions

3.3.1. Management Common to All Management Subunits

3.3.1.1. Air Quality All Subunits

Management of air quality was not specifically addressed in the Steese RMP, White Mountains RMP or the Fortymile MFP. The current plans were amended in 2005 by the Statewide Fire Plan Amendment (BLM 2005) which included one goal and procedure relative to air quality. The stated goal is to "Meet State air and water quality standards". The amendment also identified procedures, restrictions, or constraints that applied to BLM-managed lands. One such constraint was identified relative to air quality. BLM will follow the regulations stipulated in The Alaska Department of Environmental Conservation Enhanced Smoke Management Plan and the State Implementation Plan. This management direction is still valid.

3.3.1.2. Nonnative, Invasive Species All Subunits

None of the existing land use plans include management direction specifically for nonnative, invasive species (NIS), including plant, animal and pathogen pests as there was not an emphasis on NIS when these plans were developed. Current BLM management includes conducting inventories to establish presence or absence of nonnative, invasive plants (NIP); participating as a founding agency in the Committee for Noxious and Invasive Plants; and reducing the potential for introduction and spread of NIS through public education, best management practices (such as using native species for revegetation projects), and stipulations on activities authorized by the BLM.

All three plans include management direction to conduct sensitive and rare plant or vegetation inventories (Table 3.25, 3.39, and section 2.1.10. Such inventories would potentially include detection of NIPs, depending on the study design. Additionally, management actions taken to reduce disturbance of the vegetative mat and soils (sections 3.3.1.2 and 3.3.2.1) help reduce the

potential for establishment of NIPs. Existing decisions are only partially responsive to the issues surrounding NIP management. There is a need to identify integrated vegetation management techniques to rehabilitate areas infested with NIPs and to prevent the introduction and spread of NIPs into new areas.

3.3.1.3. Fisheries Management All Subunits

Fisheries management in the planning area includes subsistence, commercial, and sport fisheries. Management of these fisheries is complicated by dual State/Federal management. The Federal Subsistence Board manages subsistence fisheries in Federal conservation system units (CSU) and in non-navigable waters flowing through Federal lands. In the planning area, CSUs administered by the BLM include the Fortymile, Birch Creek, and Beaver Creek National Wild and Scenic rivers.

ADF&G sets subsistence fishing regulations and management direction for navigable waters in general domain lands, and also has management authority for all commercial and sport fisheries in the planning area. ADF&G manages fisheries according to the policies and regulations established by the State Board of Fisheries (Bue and Hayes 2008). By statute, whenever harvest restrictions are necessary, subsistence fisheries have preference over commercial and sport uses of the stock (AS 16.05.258). The management of the Yukon River salmon fishery is further complicated by the fact that the Yukon River flows across international borders. Chinook and fall chum salmon passage objectives into Canada are negotiated annually by the Yukon River Panel (Yukon River Panel 2008). Commercial fisheries in the planning area are focused exclusively on salmon. The Yukon Area is divided into 7 districts (Bue and Hayes 2008), and the Eastern Interior planning area is located in the Upper Yukon Area (Districts 5 and 6).

While the BLM does not directly manage fisheries in the planning area by setting fishing regulations, land use actions that are carried out or permitted by the BLM may impact fish habitat and populations. The Fortymile MFP, Steese RMP, Birch Creek River Management Plan, White Mountains RMP, and Beaver Creek River Management Plan include decisions applicable to fish management. Current management decisions for these areas are outlined under sections 3.3.2.4 Fortymile Subunit, 3.3.3.3 Steese Subunit, and 3.3.4.3 White Mountains Subunit.

3.3.1.4. Wildlife Management All Subunits

Wildlife habitat management is directed by BLM Manual Section 6500 which includes management of wildlife habitat on public lands. Except in special cases, the responsibility for managing the wildlife traditionally rests with the State of Alaska. Marine mammals, migratory birds, and federally listed threatened or endangered species are at least in part, the responsibility of the Federal government. In Alaska, BLM also has subsistence management responsibilities under Title VIII of ANILCA (section 3.3.1.17). Wildlife management is discussed in the Fortymile MFP, the Steese RMP, Birch Creek River Management Plan, White Mountains RMP, and the Beaver Creek River Management Plan. Current management decisions for each of these areas are outlined under sections 3.3.2.5 Fortymile Subunit, 3.3.3.4 Steese Subunit, and 3.3.4.4 White Mountains Subunit.

3.3.1.5. Special Status Species Management All Subunits

Management direction provided by Federal law, state law, BLM policy, and manual 6840 govern management of special status species in all planning subunits. The Steese and White Mountains RMPs and the Fortymile MFP provide some additional guidance. Discussion of Beaver Creek Chinook salmon is included in section 3.3.4.5. Special Status Fish White Mountains.

3.3.1.6. Wildland Fire Ecology and Management All Subunits

Current management is covered by the Land Use Plan Amendment for Wildland Fire and Fuels Management (BLM 2005) which amended the Steese RMP, the White Mountains RMP, and the Fortymile MFP. Decisions from the Fire Plan Amendment are summarized below. Watershed Objective 4 of the Fortymile MFP is to: "Maintain watershed cover consisting of fire-oriented ecosystems in a healthy condition through the use of natural or prescribed fire." This remains a valid objective.

Table 3.2. Current Management for Wildland Fire Ecology and Management in all Subunits

Current Management Decision	Is decision responsive to current issues?
Critical Management Option	
Appropriate Management Response: Suppression of all fires. Protection of all designated sites.	Changes being considered at the national level.
Fuels treatment projects allowed.	Yes. Current policy.
Fire management projects are allowed for scientific research.	Yes. Current policy.
Consider biomass utilization from fuels management projects.	Yes. Current policy.
Full Management Option	
Appropriate Management Response: Suppression of all fires. Protection of all designated sites.	Changes being considered at the national level.
Fuels treatment projects allowed.	Yes. Current policy.
Consider biomass utilization from fuels management projects.	Yes. Current policy.
Fire management projects are allowed for scientific research.	Yes. Current policy.
Limited Management Option	
Appropriate Management Response: Surveillance. Protection of all designated sites.	Changes being considered at the national level.
Wildland Fire Use is allowed.	Changes being considered at the national level.
Fuels treatment projects allowed.	Yes. Current policy.
Consider biomass utilization from fuels management projects.	Yes. Current policy.
Fire management projects are allowed for scientific research.	Yes. Current policy.
Modified Management Option	
Appropriate Management Response: Fires are suppressed based on availability of resources or surveillance. Protection of all designated sites.	Changes being considered at the national level.
Wildland Fire Use is allowed.	Changes being considered at the national level.
Fuels treatment projects allowed.	Yes. Current policy.
Consider biomass utilization from fuels management projects.	Yes. Current policy.
Fire management projects are allowed for scientific research.	Yes. Current policy.

3.3.1.7. Cultural Resources All Subunits

Cultural resources are managed in accordance with Federal law and regulation in all subunits. Specific decisions for cultural resources for the Fortymile, Steese, and White Mountains subunits are listed in Tables 3.10, 3.26, and 3.40 respectively.

3.3.1.8. Paleontological Resources All Subunits

There is no discussion of paleontological resources in the Fortymile MFP. Management decisions for the Steese NCA and White Mountains NRA are listed in Tables 3.26 and 3.41 respectively.

3.3.1.9. Visual Resource Management All Subunits

The overall goal of the Visual Resources Management (VRM) program is to minimize impacts on visual resources. Scenic quality is maintained using the VRM Objectives assigned in land use plans or other policy documents. In areas without assigned classes, an Interim VRM Class is established according to Handbook H-8410-1. Currently, there are no VRM classifications in place for the Upper Black River Subunit. Current VRM classifications for the other planning subunits are discussed under each subunit (sections 3.3.2.8, 3.3.3.7, and 3.3.4.8).

3.3.1.10. Wilderness Characteristics All Subunits

There are currently no specific management decisions for wilderness characteristics in any of the planning subunits.

3.3.1.11. Cave and Karst Resources All Subunits

There are no management decisions specific to cave and karst resources in any of the existing land use plans. Guidance for cave and karst management comes from the Federal Cave Resources protection Act (FCRPA), the BLM Manual 8380, and the regulations under 43 CFR Part 37.2. Management decisions in the White Mountains RMP provide management guidance for cave and karst resources located within the Limestone Jags Research Natural Area (Table 3.48).

3.3.1.12. Forestry and Woodland Products All Subunits

There are no forestry management decisions for the Upper Black River Subunit. However, applications for timber or forest products use would be considered. The Fortymile MFP, Steese RMP, and White Mountains RMP address forest products to some extent. These decisions are listed in Tables 3.12, 3.28, and 3.43 respectively.

3.3.1.13. Minerals All Subunits

Leasable Minerals

Currently all BLM-managed land within the planning area is withdrawn from mineral leasing through a series of public land orders (PLOs). Therefore, no mineral leasing is occurring. The Steese RMP, White Mountains RMP, and Fortymile MFP all recommend that withdrawals be

revoked and that mineral leasing be allowed, in some areas. However, these decisions were never implemented (Tables 3.14, 3.29 and 3.44).

Locatable Minerals

Currently all BLM- managed land within the planning area is withdrawn from mineral location and entry through a series of PLOs. Additionally, section 1312(b) of ANILCA withdraws the White Mountains NRA from locatable mineral entry under the mining laws. In accordance with Section 1312, new disposals of locatable minerals within the White Mountains NRA may be accomplished through a leasing program. Sections 9(a) and 15 of the Wild and Scenic Rivers Act withdraws lands within 1/2 mile of the banks of the Fortymile, Birch Creek, and Beaver Creek wild river segments from all forms of appropriation under the mining laws. Where consistent with land use plans, Section 402(a) of ANILCA allows the Secretary of Interior to classify lands within the Steese NCA as suitable for locatable mineral exploration and development and open such lands to entry and location under the mining laws. The Steese RMP and Fortymile MFP both recommended that withdrawals be revoked and that mineral entry and location be allowed, in some areas. However, these decisions were never implemented (Tables 3.14 and 3.29).

There are valid existing Federal mining claims that were in place before the PLOs were implemented in the early 1970s. Mining is occurring on valid claims in the Fortymile, Steese, and White Mountains subunits (but not within the White Mountains NRA).

Mineral Materials

Mineral material sales (sand and gravel) are considered on a case-by-case basis when applications are received in all planning subunits. Within the planning area, most of the demand for material sites have been to support road or highway construction and maintenance. The Steese and White Mountains RMP allow for mineral materials disposal if compatible with the other provisions of the RMPs (Tables 3.29 and 3.44).

3.3.1.14. Recreation and Visitor Services All Subunits

Currently, the White Mountains NRA and Steese NCA are considered special recreation management areas (SRMA). The Upper Black River Area is currently being managed as an Extensive Recreation Management Area. Therefore, management in this area is limited to custodial actions, which include providing for visitor health and safety and resource protection. Special Recreation Permits are issued for the area, as applications are received. Existing recreation management decisions for the White Mountains, Steese, and Fortymile subunits are discussed each subunit (sections 3.3.2.12, 3.3.3.10, and 3.3.4.11).

General issues in the planning area for recreation managers include:

- Increase in OHV use
- Lack of sustainable trails for OHV use
- Budget allocations, which are flat or decreasing despite demands
- Lack of workforce
- Economic and social value of recreation and tourism
- Citizen desire for a greater role in the management of their public lands
- Technological advances in OHVs, outdoor equipment, and clothing
- Integrating recreation use with sustainable management of other resources.

- Navigability and motorized use on wild river segments

3.3.1.15. Travel Management All Subunits

The Steese and White Mountains RMPs, and the Fortymile MFP include decisions relative to travel management (Tables 3.17, 3.18, 3.31, and 3.46). There are no BLM planning documents that cover the Upper Black River Subunit.

The Upper Black River Subunit is currently being managed as an "open" travel area, which means there are no major restrictions in place limiting travel for motorized and non-motorized access. Travel management related actions in the area are limited to custodial actions, which include providing for visitor health and safety and resource protection.

3.3.1.16. Lands All Subunits

Current management direction for the lands and realty program is provided by the Steese and White Mountains RMPs, the Fortymile MFP, and Federal laws and regulations. Applications or requests for rights-of-way, permits and other uses of the public land are considered on a case-by-case basis throughout the planning area. Existing decisions for each subunit are discussed in sections 3.3.2.14, 3.3.3.12, and 3.3.4.13.

Ongoing land tenure (land ownership) adjustments are occurring throughout the planning area through conveyance of land to the State and Native corporations, and certification of Native Allotments. Because of these ongoing programs, no land exchanges or sales have occurred.

3.3.1.17. Subsistence All Subunits

The Fortymile MFP was signed in 1980, prior to the signing of ANILCA. Thus the MFP does not include any management decisions for subsistence. The Steese and White Mountains RMPs and the Birch and Beaver Creek river management plans were signed in the mid-1980s and include minimal direction regarding subsistence as defined by ANILCA. At the time these RMPs were completed, the State of Alaska maintained responsibility for enactment and implementation of the act. The Secretaries of Interior and Agriculture assumed management responsibilities for the mandates of ANILCA in 1990. A decision to extend Federal subsistence jurisdiction to navigable waters within CSUs was implemented in 2001. The existing RMPs predate both decisions, thus subsistence management decisions in the RMPs are minimal.

The subsistence management program is described in more detail in section 2.4.3 - Area Profile. BLM authorized activities in all subunits are evaluated for compliance with Section 810 of ANILCA per the most current policy. Section 802 of ANILCA provides policy guidelines for subsistence management within components of the National Wild and Scenic Rivers System. This is applicable to all three designated rivers in the planning area. The designation of these rivers under the Wild and Scenic Rivers Act does not alter or preclude subsistence activities within the river corridors.

Table 3.3. Current Management Decisions for Subsistence

Current Management Decision	Status	Is Decision responsive to current issues?
Source: White Mountains and Steese ROD/RMPs (decision is the same in both)		

Subsistence Management direction: Compliance with Section 810 of ANILCA and BLM subsistence procedures as defined in IM-AK-84-339 is required for any action ... of public land.	Ongoing. BLM authorized activities are evaluated for impacts to subsistence	Yes. The policy may be updated at some point in the future.
Source: Steese ROD/RMP (BLM 1986a)		
Fisheries Management: (Paraphrased) Concentrate management efforts on Birch Creek and its tributaries as Birch Creek fishery has been identified as subsistence resource for the Village of Birch Creek (p. 17)	Ongoing.	Partially. There are other subsistence resources in the planning area in addition to Birch Creek.
Source: Beaver Creek and Birch Creek river management plans (decision is the same in both)		
Action 11.1: The management of the Birch Creek and Beaver Creek river corridors are to cause the least adverse impact possible on subsistence values (ANILCA Section 802).	Ongoing	Yes.

3.3.1.18. Hazardous Materials All Subunits

Hazardous materials are managed in accordance with Federal laws and regulations in all planning subunits. There are no management decisions for hazardous materials under either the Steese or White Mountains RMPs. There are two decisions in the Fortymile MFP. These are listed in Table 3.19 under section 3.3.2.14 Lands and Realty.

3.3.2. Fortymile Subunit

The following sections outline existing management decisions in the Fortymile MFP (BLM 1980). Decisions are organized by program area. The Fortymile subunit as defined under the Eastern Interior RMP (Map 1.1) includes additional lands which are not covered by any existing land use plan.

3.3.2.1. Soil Resources Fortymile

Decisions related to soil resources in the Fortymile MFP are contained within the Watershed section of the MFP. Those pertinent to soils are discussed in this section. The remainder are listed under section 3.3.2.2 Water Resources Fortymile.

Table 3.4. Current Management for Soil Resources From the Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Objective Watershed (W) 3: Regulate user and agency activities to prevent unnatural or accelerated erosion.	Ongoing. Measures to reduce erosion are applied on a project specific basis.	Yes. This management action is effective in preventing negative impacts to soils.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
W 3.5: Conduct appropriate soil surveys in areas which are being considered for intensive use or development.	Soil Surveys have not been completed. No areas of intensive use or substantial development as of 2008.	Yes. Conducting surveys would identify soils with high erosion characteristics.
W 3.2: All areas will remain open to winter use (ground frozen to 6 inches) for vehicles 6,000 lbs or less. Existing roads and trails open to all vehicles when ground is frozen to a depth of 6 inches or more. At all other times of the year, vehicles exceeding 6,000 lbs or any vehicle with a blade, will require a permit, and vehicles weighing 6,000 or less will be limited to existing roads or trails except for incidental use; i.e. to locate camp spots or retrieve downed game animals.	Ongoing.	Yes. This management action is effective in reducing negative impacts to soils.

3.3.2.2. Water Resources Fortymile

Watershed management objectives in the Fortymile RMP (BLM 1980) were: (1) to manage watershed areas to provide users of public lands with water meeting or exceeding the Alaska Water Quality Standards (18 AAC 70.020) excepting those waters with natural characteristics outside the criteria; and (2) Regulate user and agency activities to prevent unnatural or accelerated erosion. Aquatic Wildlife water resource management objectives included maintaining water quality sufficient for the optimum reproduction, growth, and survival of native fish populations. The management decisions to achieve these objectives are listed in Table 3.5.

Table 3.5. Current Management for Water Resources from the Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Watershed (W) 2.1: Limit activities within standard project flood limits, in accordance with E.O. 11988.	Ongoing.	Yes. Measures are effective in achieving desired outcomes when applied as site specific stipulations.
W 2.2: Determine limits of flood and ice jams hazard on all streams and rivers in the vicinity of proposed construction projects of land disposal areas of public lands.	Ongoing. BLM reviews limits of flood and ice jams hazard through participation in stream gauging.	Partially. Responsive at the project level; but not a land use plan level decision.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
W 2.3: Cooperate with other State and Federal agencies in monitoring water quality.	Ongoing. Cooperators include ADNR, NPS, FWS, USGS. BLM works with ADEC to ensure activities permitted by BLM do not exceed Water Quality Standards.	Yes. Opportunities exist to expand cooperative field projects with State and Federal agencies.
W 2.5: Evaluate existing snow courses and opportunities for new data gathering sites. Maintain and read snow courses in cooperation with Soil Conservation Service.	Ongoing. BLM monitors 4 snow course sites the Fortymile area in cooperation with Soil Conservation Service.	Partially. Evaluate existing studies and opportunities for new studies. National Weather Service has expressed interest in developing new climate stations.
Wildlife Aquatic (WA) 3.1: Establish buffer strips on stream banks and the margin of all lakes where physical alterations are planned or take place through stipulations designed on a site-by-site basis.	Ongoing. Measures to protect stream banks are applied at the project level.	Yes. This management action is effective in preventing negative impacts to riparian habitat and stream bank stability.
WA 5.1: Coordinate with ADEC on all proposed activities which involve discharges into surface waters. Insure that development programs permitted by the BLM do not exceed the State Water Quality Standards established for such development.	Ongoing. BLM works closely with ADEC to ensure activities permitted by BLM do not exceed Water Quality Standards.	Yes.

3.3.2.3. Vegetative Communities Fortymile

The Fortymile MFP does not contain any decisions specific to vegetation.

3.3.2.4. Fish Management Fortymile

The objectives for aquatic wildlife management in the Fortymile MFP were: (1) to determine effects of the “Kink” on the North Fork Fortymile fishery; (2) to protect and preserve fish habitat on a continuing basis; (3) to protect fish habitat from siltation caused by stream bank and floodplain destruction; (4) to maintain stream crossings in a manner which will allow unobstructed passage of fish; and (5) to maintain water quality sufficient for the optimum reproduction, growth, and survival of native fish populations. The management decisions to achieve these objectives are listed in Table 3.6. The Fortymile River Management Plan (BLM 1983a) includes management actions related to water quality but not specifically to fisheries management.

Table 3.6. Current fisheries management from the Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Wildlife Aquatic (WA) 1.1: Continue monitoring for a five year period to determine if the "kink" blocks grayling during upstream migrations.	A comprehensive, long term fishery investigation to determine the effect of the "kink" as a barrier to Arctic grayling migration has not been completed.	No. Determining if the Kink blocks upstream migration is not a priority. Fishery pressure on grayling is relatively low (Burr 2006). A general fisheries inventory of the Fortymile River is warranted.
WA 1.2: Conduct a study on the aquatic biology of the North Fork Fortymile River.	The North Fork Arctic grayling fishery was monitored for age, sex, and length in 1999. Repeating this study is not a high priority.	No. However, a general fisheries inventory of the North Fork Fortymile and other tributaries may be warranted.
WA 1.3: Conduct a study to determine present recreational use on the North Fork Fortymile River.	A study has not been conducted. Current recreational fishing use on the North Fork can be estimated from special recreation permits, long-term camping permits, and ADF&G reports.	No. Current recreational fishing on the North Fork is believed to be low. The 5-year average catch and harvest of Arctic grayling is 526 and 146 fish respectively (Burr 2006). Studies of recreational use would be a priority only if use increases substantially.
WA 2.1: Locate and map in detail specific fish overwintering areas in streams and lakes in the planning unit.	The decision has not been implemented but is still valid.	Yes. Overwintering areas are crucial habitats for various fish, especially Arctic grayling. Identifications of such areas is important for evaluation of activities that impact fishery habitat.
WA 2.2: Protect fish habitat. Consider actions which will affect fish habitat on a case-by-case basis, and develop appropriate mitigating measures for each action.	Ongoing. Mitigation measures are effective in achieving desired outcomes when applied as site-specific stipulations.	Yes. Protecting fish habitat is a valid management. New inventories of fishery resources, habitat, and water quality may be warranted.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
WA 2.3: Install screens of no larger than ¼ inch mesh on the intake hoses of all water pumps when water is taken from under the ice or open water locations.	Ongoing. ADF&G requires that screen mesh not exceed 3/32 inch, and water velocity at the screen surface not exceed 0.4 feet per second.	Partially. Use of screens on intake hoses is a valid stipulation. However, the criteria for mesh size and other factors are determined by ADF&G.
WA 2.4: Minimize snow removal from the ice at sites of winter water withdrawals.	The intent of this action was to protect fish overwintering habitat from dewatering.	Yes. This remains valid - but demand for winter water withdrawal has not occurred.
WA 2.5: Restrict man-caused instream disturbances which might affect fish spawning.	Ongoing. Human-caused disturbances are evaluated on a project specific basis, and stipulations have been applied to minimize disturbance.	Yes. Implementation at the project level has reduced disturbance of spawning habitat. New inventories of fish spawning habitat may be warranted.
WA 3.1: Establish buffer strips on stream banks and the margin of all lakes where physical alterations are planned or take place through stipulations designed on a site-by-site basis.	Ongoing. (see Table 3.5)	Yes. (see Table 3.5)
WA 4.1: Coordinate with ADF&G to insure that stream crossing structures will conform with fish passage requirements.	Ongoing.	Yes. This management action is effective promoting fish passage.
WA 5.1: Coordinate with ADEC on all proposed activities which involve discharges into surface waters. Insure that development programs permitted by the BLM do not exceed the State Water Quality Standards.	Ongoing. (see Table 3.5)	Yes. This management action is important for the maintenance of water quality for the health of native fish populations.

3.3.2.5. Wildlife Management Fortymile

The objectives for wildlife management in the Fortymile MFP were: (1) Protect known crucial wildlife habitat on public lands; (2) Improve wildlife habitat and/or allow for the natural maintenance of habitat and recycling of nutrients. Maintain habitat diversity and productivity; (3) Increase and expand knowledge of baseline resource information through inventory on public lands; and (4) Promote public awareness of ecological principles in resource management. The management decisions to achieve these objectives are listed in Table 3.7. Many of these decisions are no longer valid as the lands involved are no longer under BLM ownership or are not within the planning area. The Fortymile River Management Plan (BLM 1983a) also includes management actions related to reducing impacts to wildlife.

Table 3.7. Current wildlife management from the Fortymile MFP and Fortymile River Management Plan

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Source: Fortymile MFP (BLM 1980)		
WT 1.2: The areas identified and delineated on the wildlife overlay are recognized as sensitive areas important for the continued existence and well being of Dall sheep, caribou, moose, bison, waterfowl, and shorebirds, sharp-tailed grouse, raptors, grizzly bears, and other species described in this recommendation and in associated recommendations.	Much of the lands identified have been conveyed to State of Alaska or to Native corporations. The original overlays (maps) have been lost so specifics cannot be addressed.	Partially. Some important habitats will be retained in BLM ownership and may require special management consideration. These areas need to be identified based on current land ownership.
WT- 1.3, 1.4, 1.4a, 1.4b, 1.5, 1.6, 1.7, 1.8, 1.9, 1.10, and 1.12. Habitat Management Plans (HMPs) will be developed for all designated areas in cooperation and consultation with ADF&G. If the nature of the areas and/or species is such that ACEC designation is appropriate, proceed with the ACEC designation process.	Much of the lands identified have been conveyed. HMPs have not been developed for the remainder. The original overlays (maps) have been lost so specifics cannot be addressed. No ACECs were designated.	Yes. Identify important wildlife habitats on lands that have not been conveyed and evaluate for potential ACEC designation and development of HMPs. If appropriate, designate ACECs during the planning process.
WT1.3: Protect identified mineral licks, using appropriate withdrawals if necessary.	Specific withdrawals have not been put in place on mineral licks. However, any occurring on BLM land are currently under ANCSA 17 d(1) withdrawals.	Yes. Mineral licks are considered crucial habitats and should be protected; several are known to occur on BLM land.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
WT 1.4: All known Dall sheep range should be given consideration under WT 1.2, including: 1) Arctic Dome/Upper Slate Creek Sheep Unit 1; 2) Mentasta Mountains Sheep Unit 2; 3) Granite Mountain/Black Rapids Sheep Unit 3; 4) Macomb Plateau/Little Gerstle River Sheep Unit 4; and 5) Salcha River Sheep Unit 5.; WT 1.4(a) Dall sheep habitat on public land in the Glacier Mountain/Mount Eldridge Sheep Unit 6 should be considered under WT 1. WT 1.4b: Known Dall sheep lambing areas within Granite Mountain/Black Rapids Sheep Unit 3 should be considered under WT 1.2.	Most of these areas have been conveyed or are outside the Eastern Interior planning area. Known Dall sheep habitat within the planning area and on BLM-managed land is recognized as important habitat.	Yes. Important Dall sheep habitats may remain in BLM ownership. ACEC designation for Glacier Mountain/Mt. Eldridge, Mt. Harper, and upper Granite Creek (Arctic Dome/Upper Slate Creek) should be considered.
WT 1.5: Known and existing caribou calving areas, including the Upper Salcha River Caribou Unit 1 and the Delta River Caribou Unit 2 should be considered under WT 1.2.	These areas have been conveyed or are outside the Eastern Interior planning area.	No.
WT 1.6: Identify crucial bison calving areas on public land along the Delta River and consider under WT 1.2. WT 1.6a: Prohibit high intensity human activity and resource use on crucial bison calving areas along the Delta River during April 1 to July 1.		
WT 1.7: All known seasonal concentration areas for moose on public lands should be considered under WT 1.2. Including: Mosquito Flat/Chicken Moose Unit 1; Mount Fairplay Moose Unit 2; Ladue River Moose Unit 3; Sixtymile Butte Moose Unit 4; Tok/Little Tok River Moose Unit 5. Upper Mosquito Fork Moose Unit 6. Delta River/Granite Mountain Moose Unit 7; Macomb Plateau/Little Gerstle River Moose Unit 8; Upper Salcha River Moose Unit 9; Liberty Creek Moose Unit 10.	Most but not all of these areas have been conveyed or are outside the planning area. See WT 1.2.	Partially. Some important wildlife habitats will be retained in BLM ownership and may require special management consideration. These areas need to be identified based on current land ownership.
WT 1.8: All known waterfowl and shorebird nesting and brood habitat on public land should be considered under WT 1.2. Waterfowl		

Current Management Decision	Status	Is Decision Responsive to Current Issues?
concentration areas include: Ladue River Waterfowl Unit 1; West Fork/Dennison Fork Waterfowl Unit 2; Mosquito Fork Waterfowl Unit 3; Delta River Waterfowl Unit 4; Upper Salcha River Waterfowl Unit 5; and Gardiner Creek Waterfowl Unit 6.		
WT 1.9: All known sharp-tailed grouse leks should be considered under WT 1.2.		
WT 1.10: The Delta River spring grizzly bear concentration area should be considered under WT 1.2.	This area is outside the planning area.	No.
WT 1.11: Allow no domestic livestock (except recreational pack animal uses) grazing on Dall sheep and bison ranges; allow no reindeer grazing on any caribou range identified on public lands.	No grazing of livestock (except pack animals) or reindeer has occurred. Bison habitat is not on BLM land in the planning area.	Yes. Reindeer grazing is not compatible with caribou habitat. Domestic animals in Dall sheep habitat can cause disease transmission.
WT 1.12: All areas of crucial wildlife habitat should be considered under WT 1.2.	See WT 1.2.	
WT 1.13: Reduce wildlife/human conflicts as much as possible. Develop camp requirements concerning such things as garbage disposal, fencing etc. on a case-by-case basis.	Ongoing through the NEPA review process on proposed activities on BLM land.	Yes. Reducing wildlife/human conflicts helps reduce impacts to wildlife and to meet wildlife management goals.
WT 2.1: Initiate planned programs of prescribed fires on public lands in the Fortymile Resource Area to improve habitat conditions for successional wildlife species through development of HMPs and Fire Management Plans beginning in 1982. Specific target species include moose, bison, waterfowl, sharp-tailed grouse, various raptors, and songbirds. Initial priority burn areas are: Tok River - Tok/Little Tok River Moose Unit 5; Taylor Highway-Mount Fairplay; Mount Fairplay Moose Unit 2; Sharp-tailed grouse leks; West Fork Fortymile River; Mount Fairplay Moose Unit 2; West Fork/Dennison Fork Waterfowl Unit 2; Mosquito Fork-Upper Mosquito Fork Moose Unit 6; Delta River-Delta Bison	Ongoing. Several landscape scale prescribed fires have been conducted in Fortymile area, including East Fork (1998), Mosquito Flats (1999), and Kechumstuk (1999). Others can be considered. Natural wildfire has accomplished many of these goals.	Partially. Areas identified for prescribed fire need to be reevaluated based on current land ownership and planning area boundaries. Some of these areas are no longer under BLM management. Develop fire management goals for wildlife and evaluate the need for prescribed fire on selected sites.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Calving Area; Delta River/Granite Mountain Moose Unit 7; Give identified priority areas immediate consideration under W 4.2.		
WT 2.3: Enter into cooperative agreements with affected landowners and resource management agencies to initiate habitat improvement projects that benefit wildlife populations of mutual interest. A priority would be prescribed fire in Mosquito Flats.	See WT 2.1. Mosquito Flats prescribed fire involved cooperation between BLM and ADF&G.	See WT 2.1
WT 2.4: Encourage logging and firewood cutting. Plan these actions with habitat improvement as one of the objectives.	Logging not encouraged, but may be permitted when requested. Demand is low. Most BLM lands are not easily accessible from existing roads. Timber value is low.	No. Encouraging these activities may not result in overall benefit to wildlife. But these activities could be conducted to achieve some benefit to wildlife. Evaluate locations for forest product harvest relative to important wildlife habitat. Incorporate wildlife habitat improvement measures into logging and wood cutting proposals.
WT 2.5: Mechanically remove shrubs in 1/5-1/4 acre patches on known sharp-tail grouse leks along the Taylor Highway north of Mount Fairplay.	Not done. Little BLM land remains in this area.	No.
WT 2.6: Insure rehabilitation of material sites by appropriate means. Rehabilitation should be done so as to enhance sharp-tailed grouse habitat.	Material site rehabilitation has been reviewed in NEPA process but has not focused on sharp-tailed grouse habitat.	Yes. Material sites should be rehabilitated. Potential to enhance grouse habitat can be evaluated at project level.
WT 3.2: Conduct baseline habitat use, habitat characteristics, movement, and distribution studies for Dall sheep in the Glacier Mountain/Mount Eldridge Sheep Unit 6. Inventory should include cooperative population studies with ADF&G. Studies should commence prior to any decisions made for access development to Slate Creek Asbestos mining area.	Ongoing. ADF&G has completed aerial surveys, some with BLM funding.	Yes. Baseline data is needed for management decisions and mitigation of impacts at the project level. If BLM lands in this area are retained, baseline studies are warranted.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
WT 3.3: Conduct studies to determine caribou winter range, lichen, and fire relationship for the Fortymile Caribou Herd.	Studies of Nelchina caribou on the Fortymile winter range have been conducted by ADF&G.	Yes. Greater understanding is necessary, especially in regard to the future affects of climate change.
WT 3.4: Conduct ongoing, habitat delineation and monitoring studies related to wildfire-fire-succession relationships within the recommended prescribed and prescription fire areas.	Limited efforts have been conducted. Budget and man power limit this work.	Yes. Will help improve future fire management and prescribed fire. Cooperate with University and ADF&G studies to improve knowledge.
WT 3.5: Initiate inventory of crucial waterfowl and shorebird nesting, brood rearing, and staging habitat on public land in the Fortymile Resource Area.	Most waterfowl habitat has been conveyed. Inventory has not been done on remaining BLM lands.	Yes. Waterfowl and shorebird habitat remaining under BLM ownership should be inventoried (i.e. Mosquito Flats).
WT 3.6: Participate in intensive range and forage utilization studies on the Delta Bison Herd range.	This area is outside of planning area.	No.
WT 3.7: Initiate inventories of crucial furbearer habitat, emphasizing important harvest areas, winter habitat, denning areas, key reproduction areas, and other crucial habitats. Inventories and studies should also identity population status, habitat use, distribution, and limiting factors related to crucial habitat and be conducted in cooperation with ADF&G.	ADF&G has conducted some studies of furbearers. BLM has provided funding assistance on some studies. Some habitats have likely been conveyed to the State or Native corporations.	Yes. But BLM participation likely limited to cooperation with other agencies such as ADF&G due to limited land ownership.
WT 5.1: Initiate educational program that reflects the role of fire in Alaska. The program should reflect fire as a natural agent of change creating habitat diversity that is dynamic and recyclable in maintaining a diversity of wildlife species. The temporal and special relationships of habitat need to be emphasized.	Education efforts have been conducted, but no formal fire education program developed. Large acreages have burned in wildfires.	Yes. There is a lack of understanding on the role of fire. Additional educational efforts are warranted.
Fortymile River Management Plan (BLM 1983a)		

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Action 1.1: Locations and construction techniques (of transportation and utility systems) shall be selected to minimize adverse effects on subsistence, scenic, recreational, fish, wildlife, and other values of the river area.	Ongoing. This is addressed on a case-by-case basis as applications are received.	Yes. This is a valid decision.
Action 1.5: The location, time of year, and the type of (permitted off-road) vehicle use shall be selected to minimize adverse effects on scenic, recreational, fish, wildlife, and other values of the river area.	Ongoing. This is addressed on a case-by-case basis as applications are received.	Yes. This is a valid decision.

3.3.2.6. Special Status Species Management Fortymile

Special Status Wildlife

When the Fortymile MFP was developed, the American peregrine falcon was listed as an endangered species. It was delisted in 1999 but remains a BLM sensitive species. No other sensitive species were addressed by this plan.

Table 3.8. Current Management for Special Status Wildlife in the Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
WT 1.1: Nominate known peregrine falcon nesting site(s) designation as critical habitat under the ESA.	American peregrine critical habitat was not designated and the species was delisted in 1999.	No. American peregrine falcon is no longer listed. Other protective options for habitat should be considered.
WT 3.1: Conduct intensive peregrine falcon nesting habitat inventory in the Fortymile River drainage, including the North, Middle, Mosquito, Dennison, and South Forks of the Fortymile River as well as tributaries. The Upper Salcha River should also be included.	Intensive inventories of peregrine falcon nesting has occurred in some portions of the Fortymile. Salcha river lands have been conveyed.	Yes. Not all habitats have been inventoried. Selected sites should be monitored.

Special Status Plants

In addition to the general management direction for special status plants provided by BLM Manual 6840, the following decisions were included in the Fortymile MFP.

Table 3.9. Current Management for Special Status Plants Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
W 1.1: Conduct an inventory of the Fortymile Planning Unit to determine the presence, distribution, and relative numbers of sensitive, threatened, and endangered plant species.	Inventories of select sites were conducted (Batten et al. 1979), most of which are no longer under BLM management. A brief survey of some Middle Fork Fortymile River (Knuckles 1994) was conducted.	Yes. Once land status is finalized, additional sites on BLM land should be inventoried.
W 1.3: Limit surface disturbing activities in areas containing sensitive, threatened, and endangered plants, and scientifically significant plants or plant communities (shown on overlay). Consider each proposed activity on a case-by-case basis.	Ongoing on a case-by-case basis where these habitats are identified and on BLM land. The original overlays (maps) have been lost so specifics cannot be addressed.	Yes. As habitats for special status species are identified through inventory or if new species are listed this decision would be appropriate.

3.3.2.7. Cultural Resources Fortymile

Cultural resource management in the Fortymile is ongoing in accordance with Federal law and regulation. Additional guidance is provided by the Fortymile MFP, the Fortymile River Management Plan, and the Fort Egbert Cultural Resource Management Plan. Decisions from these plans are discussed in the Table 3.10.

Table 3.10. Current Management for Cultural Resources Fortymile MFP and Fortymile River

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Source: Fortymile MFP (BLM 1980)		
CR 1.1: Conduct Class II inventories with priorities determined by the Area Manager. Maintain files on all known sites and trails. Includes CR 1.2: Compile and maintain an atlas of known sites on BLM land in the Fortymile area. Collect and maintain files containing information about these sites. Where possible, negative information and a Cultural Resource Evaluation System (CRES) evaluation for each site should be included.	Ongoing for the past 10 years; 90-95% up-to-date for known sites. Class II and III inventories continue. Individual site files are maintained and updated. Positive and negative survey information is updated on resource area maps and reports per survey. Each site undergoes significant evaluation.	Yes. Inventory and compilation of data should continue.
CR 1.4: Complete CRES evaluation for all known cultural resources on BLM land in the Fortymile Resource Area, and any new resources located as a result of inventory work.	Ongoing for the past 10 years; 90-95% up-to-date for known sites.	Yes.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
CR 2.1: Designate a representative sample of archaeological and historic sites for preservation for future scientific use. Stabilize such sites if necessary, but avoid all other disturbances. Location of these sites should not be made public. Excavation should be permitted when new and significant data is likely to be generated, or when imminent destruction of the site makes immediate salvage necessary. Incorporate recommendations CR- 2.2, 2.3, 2.4, and 2.5 in this action.	This has not been done.	Yes. Required by BLM Manual 8110.42 (B). Language needs updating to conform to manual.
CR 2.3: Evaluate known and newly discovered historic sites in the following areas for their potential to contribute to future research questions. 1) Fortymile River; 2) Taylor Highway; and 3) Utility Corridor.	Ongoing as sites are discovered. Much of the land along the Taylor Highway has been conveyed. The utility corridor is outside the planning area.	Yes. Required by BLM Manual 8110.42 (B). Language needs updating to conform to manual. Focus areas may change based on current land ownership.
CR 3.1: Designate a representative sample of archeological and historic sites for present scientific use. Encourage excavation of these sites by competent professionals. If possible, combine excavation with interpretation for the public. Incorporate recommendations 3.2, 3.3, 3.4, and 3.5 into this action.	This has not been done.	Yes. Required by BLM Manual 8110.42 (B). Language needs updating to conform to manual.
CR 4.1: Designate appropriate sites for public use. Provide access and information, and encourage adaptive reuse of suitable structures. Incorporate recommendation 4.2 in this action.	Completed for some sites. Fort Egbert duly designated. More sites can and should be added in the Fortymile river corridor to reflect current management of Fortymile NWSR historic and cultural designations.	Yes. Required by BLM Manual 8110(B) Language needs updating to conform to manual. Coordination between cultural, interpretive and recreation staff on management objectives.
CR 4.3: Monitor sites designated for public use on a regular basis, and combine interpretation of sites with an educational program to inform the public of the negative effects of site disturbance.	Fort Egbert is monitored and maintained regularly. Interpretation and public education provided by Eagle Historical Society.	Yes. Interpretive priorities in the Fort Egbert Cultural Resource Management Plan needs to be examined.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
CR 5.1: Designate appropriate sites for socio-cultural use and protection. Local religious, cultural, ethnic, and social groups should participate in the identification process and should have a voice in the management of the sites. Incorporate recommendations CR- 5.3 and 5.4 in this action.	This was not done. The current planning process is an opportunity to identify these areas through scoping and review of the draft RMP/EIS.	Yes. Required by BLM Manual 8110.42 (B). Language needs updating to conform to manual.
CR 6.1: Designate for management purposes sites appropriate for answering questions regarding the following types of BLM permitted actions: The effects of winter activities such as overland transport of heavy equipment or the effects of concentrated firewood cutting on cultural resources; The extent and nature of adverse impacts associated with significant recreational use; The effectiveness of management techniques such as signing, educational interpretation, and monitoring; The effectiveness of restoration/stabilization techniques; and the effects of fire on subsurface cultural resources.	This has not been done and the rational for implementing it is not clear. Although in theory this decision makes sense, there is not a current need to "sacrifice" existing, non-impacted sites to this effort when monitoring or use of already impacted sites may suffice to address these questions.	Possibly. Suggested by BLM Manual 8110(B). Language needs updating to conform to manual. Review this decision during the planning process.
CR 6.2: Sites with high value for scientific or public use should not be designated for management purposes.	Done, but only by default since most known sites have not been designated for any purposes, as yet.	Yes.
Source: Fortymile River Management Plan (BLM 1983a)		
Action 7.1: If artifacts are identified that have truly unique scientific or interpretive value that seem to be in significant danger from vandals or souvenir collectors, they will be salvaged for display in a supervised environment.	Likely only implemented in recent years.	Yes. Visitation to the Fortymile is increasing. This decision could be dropped with out undue effect; the cultural program will still do this necessary action regardless.
Action 7.2: On the wild and scenic segments interpretive information will be placed at river access points outlining the nonrenewable nature of cultural resources and asking cooperation in their maintenance. Brochures and other off-site interpretation will be developed to encourage appreciation and respect for historic and archaeological resources.	This has not been done specifically for cultural resources. Waysides have been developed on the Taylor Highway for interpretive purposes (see Table 3.16, Recreation).	Yes, responsive to current issues as visitation to the Fortymile NWSR is increasing.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Action 7.3: On-site interpretation of the mining history of the area will be developed on the recreational segment near Jack Wade.	This has not been done.	Possibly. May be responsive to increased visitation on the Taylor Highway. But this may not be the best locale for on-site interpretation.
Action 8.2: The BLM will not maintain cabins in the river corridor, except to occasionally pick up trash. [This Action includes historic cabins.]	Trespass use of cabins was an issue at the time. Some limited cabin maintenance has been done. Follow up action on this decision, regarding mitigation of adverse effects on Federal actions (per NHPA 1966) never occurred (SHPO consultation). Information was lost as historic cabins degraded.	No. The earlier trespass issue has largely dissipated. It may be appropriate to maintain some historic cabins.
Fort Egbert, Alaska: A Cultural Resource Management Plan (MP)		
This plan outlines the history of the Fort, presents specific use allocations for its cultural resources, outlines protection and information objectives, and suggests specific recreational and cultural resource priorities. It also contains the Fort Egbert Cooperative Management Agreement between the BLM and the Eagle Historical Society (Appendix 1).	The document is still active, although many of the suggested issues/actions outlined in Chapter 5 were never acted upon. This is an activity level plan.	Yes. This document is still adequate for addressing current needs and issues. However, changes to this document would likely not be addressed in the RMP.

3.3.2.8. Visual Resource Management Fortymile

Most of the Fortymile Resource Area, does not currently have assigned VRM classes. A Class I rating is assigned to wild and scenic segments of the Fortymile NWSR, according to BLM Manual 8351 policy. In areas without assigned classes, an Interim VRM Class is established according to the process outlined in Handbook H-8410-1 and Visual Resource Contrast Rating is evaluated according to Handbook H-8431-1 on a case-by-case basis. All projects are reviewed for impacts to scenic quality and visual resources during the NEPA review process.

The six objectives for VRM in the Fortymile MFP were (1) Maintain or improve the quality of the visual resources within the Fortymile planning unit based on BLM's Visual Resource Management System (VRM Manual 8400); (2) Manage VRM Class I areas to provide primarily for natural ecological changes; however, some very limited management activities may be allowed. Any contrast within the characteristic environment must not attract attention; (3) Manage VRM Class II areas so changes caused by management activity are not evident in the characteristic landscape. A contrast may be seen but should not attract attention; (4) Manage VRM Class III areas so that changes caused by management activity may be evident and begin to

attract attention in the characteristic landscape. However, the changes should remain subordinate to the existing characteristic landscape; (5) Manage VRM Class IV areas so that changes may attract attention and be a dominate feature of the landscape in terms of scale; However, the changes should repeat the basic elements (form, line, color, texture) inherent in the characteristic landscape; and (6) All areas designated VRM Class V should be rehabilitated so they can meet the scenic quality of the surrounding landscape. These objectives are still valid. All projects are reviewed for impacts to scenic quality and visual resources during NEPA review.

Table 3.11. Current Management for Visual Resources from the Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
VRM 1.2: Initiate further VRM inventory and analysis within the Fortymile Planning Unit to upgrade the URA, Planning Area Analysis (PAA) and MFP to reach a more reasonable level of detail required in the new VRM Manual 8400. This analysis should be completed prior to a rewrite of the URA/MFP. a) Information on physiographic regions for URA II; b) More complete description of scenic quality rating units; c) Description of Scenic Quality Rating Units as grouped by Scenic Quality Classes; d) Indication of trends in scenic quality; e) Identify ACECs for Scenic Values and; f) Rewrite the Evaluation for the PAA relating to Visual Sensitivity Determinations.	VRM inventory and analysis has not been completed for the planning unit. The wild and scenic segments of the Fortymile NWSR are managed as a Class I area per BLM manual guidance.	Yes. A VRM analysis will be completed as part of the planning process. VRM management classes will be established for the area through the Eastern Interior RMP. ACECs will be considered through the planning process.
VRM 2.1: Manage the proposed Delta and Fortymile National Wild and Scenic Rivers according to the terms of the withdrawal order and BLM policy. Final visual resource management guidelines will be included in the river management plans… which will be required if Congress does in fact designate these rivers as Wild and Scenic.	All NEPA documents are reviewed for impacts to scenic quality and visual resources. No VRM Classes assigned but BLM Manual 8351 Policy guidance assigns Class I to wild and scenic segments.	Partially. The Delta River is outside the planning area. The Fortymile NWSR is managed according to an approved river management plan. VRM class needs to be assigned to the recreational segments.
VRM 2.2: Manage Potential Wilderness Study Areas according to the Interim Management Policy and Guidelines for Lands Under Wilderness Review, and any further guidelines.	There are no Wilderness Study Areas in the Fortymile Plan Area.	Not Applicable.
VRM Objective 3: Manage VRM Class II areas so changes caused by management activity are not evident in the characteristic landscape. A contrast may be seen but should not attract attention.	No VRM classes assigned. All NEPA documents are reviewed for impacts to scenic quality and visual resources.	Yes. But VRM classes need to be assigned. Terminology and class definitions need to be updated to conform with current manual guidance.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
VRM 3.1: All activities should be planned so as to minimize impacts on visual resources. Specific requirements should be geared to the scenic quality of the particular area under consideration. All areas delineated as VRM Class III on the overlay should be managed so that new management activities will not dominate the view or appear as unnatural occurrences. All areas delineated as VRM Class IV on the overlay should be managed so that new management activities blend into the landscape by simulating what could be natural occurrences.	All NEPA documents are reviewed for impacts to scenic quality and visual resources. VRM classes have not been assigned.	Yes. But VRM classes need to be assigned. Terminology and class definitions need to be updated to conform with current manual guidance.
VRM 3.1: All areas delineated as VRM Class V on the overlay should be managed so as to rehabilitate disturbances by removal or modification, so they will meet the scenic quality of the surrounding landscape. The following three steps are recommended: Incorporate inventory of Class V intrusions as an integral part of studies recommended in VRM-1.2; Following inventory of Class V area, prepare recommendations for alternative methods of rehabilitation of any given intrusion, accompanied with a priority list of sites to be rehabilitated and the supporting activity responsible for action and; Prepare guidelines for rehabilitation pertinent to the Planning Unit which will provide criteria and management alternatives for future land disturbing activities.	This decision has not been implemented. VRM classes have not been assigned. The overlays were lost so it is not known where the VRM Class V areas were. Additionally, land status has changed considerably since the MFP was completed.	Partially. Terminology needs to be revised to meet current manual. Areas in need of rehabilitation should be identified during VRM inventory. The level of rehabilitation needed will be determined by the assigned VRM class for the area surrounding the project in need of rehabilitation.

3.3.2.9. Forestry and Woodland Products Fortymile

The forest product objectives for the Fortymile MFP were (1) Continue to make firewood available to the public; (2) Provide residents with commercial timber at fair market value.

Table 3.12. Current Management for Forestry and Woodland Products Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is decision responsive to current issues?
F 1.2: Continue to make firewood available on the Black Rapids and Taylor Highway free use areas	BLM has continued to process Free Use Permits in the Fortymile Area; the Black Rapids area is not within the management use.	No. Interest exists for personal use timber but harvest areas need to be changed and the Fortymile NWSR and Fort Egbert areas need to be addressed. Objectives for the Fortymile River need to be more in line with Beaver and Birch wild rivers.

Current Management Decision	Status	Is decision responsive to current issues?
F 1.3: Set aside additional designated areas exclusively for firewood cutting when sufficient demand arises.	No additional areas have been set up due to lack of demand.	No. Few areas exist where BLM could establish designated firewood areas with good access and demand is limited. Rather than designating specific areas, respond to on-demand requests as needed.
F 2.1: Initiate an inventory of forest resources when it is warranted by demand.	This has not been done based on lack of demand.	Yes. Not warranted by current level of use. But would be appropriate if demand increased significantly.

3.3.2.10. Livestock Grazing Fortymile

The Fortymile MFP includes Range Management (RM) objective and decisions. Range management or livestock grazing are not addressed in the Steese or the White Mountains RMPs. The Range Management Objective was to allow for development of livestock operations within the Fortymile Area.

Table 3.13. Current Management for Livestock Grazing, Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is decision responsive to current issues?
RM 1.1: Allow development of livestock operations in the Fortymile area.	Currently no grazing operations are approved and no applications are pending. There is no demand.	No. No demand for permits; conflicts with wildlife, fish, and subsistence; lack of suitable grazing land.
RM 1.2: When demand requires, initiate a range inventory in the Fortymile area.	No range inventory has been done, as no permits have been issues and no grazing has occurred.	No. Not needed based on lack of permits.

3.3.2.11. Minerals Management Fortymile

As discussed in section 3.3.1.13 Minerals All Subunits, lands within the planning area are currently withdrawn from the mining laws with the exception of valid existing Federal claims and the sale of mineral materials. The four minerals objectives from the MFP were (1) Protect and maintain those lands identified in the MFP Step 1 Overlay as being underlain by coal deposits and assure that these lands remain available to exploration, leasing, and development; (2) Provide additional sources of sand and gravel/or aggregate to meet local construction needs and for highway, railway, airfield, and pipeline construction and maintenance purposes; (3) 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; and (4) All public land should be inventoried for its mineral potential before any action is taken which will prohibit entry. The validity of these objectives needs to be reviewed based on changes in land ownership within the Fortymile Subunit.

Table 3.14. Current Management for Minerals Management in the Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is the Decision Responsive to Current Issues?
M 1.2: The Chicken Creek area should remain open to coal exploration and development.	All BLM lands are withdrawn from mineral leasing under existing PLOs.	Existing withdrawals will be reviewed and a determination made on the need for revocation or modification.
M 1.3: Proceed immediately to complete work on Preference Right Coal lease Application F-014996.	This coal lease was closed in 1996.	No. There are no preferential coal leases remaining in the planning area.
M 2.1: A five acre community pit should be established in the community of Chicken.	No community pit exists. BLM land has been conveyed except for Federal mining claims or lands within the river corridor.	No. The only remaining BLM land in this area is within the river corridor. Gravel could be obtained from the State.
M 2.2: A five acre community pit should be established in Eagle.	There is a gravel pit in Eagle. There is a need to expand this pit.	Yes. Mineral materials may also be available on State or Native land in the area.
M 2.4: Material sites should be provided for the construction and maintenance of highways, railways, airfields, and pipelines.	Ongoing.	Yes.
M 3.1: By 1985, all public land, which has been withdrawn by PLO 5250, and has not been recommended to Congress, should be restored to public land, open to mineral entry. The major lands include those within the Fortymile River drainage basin (e.g. Butte Creek, Canyon Creek, Walker Fork, and Slate Creek).	PLO 5250 is still in place.	No. This decision should be reviewed and a determination made on which lands should be opened to mineral entry based on current information.
M 4.1: Conduct inventories as funding permits. Give special emphasis to areas being considered for withdrawal from mineral entry.	No new withdrawals have been proposed so inventory has not been a priority.	Depending upon mineral potential, additional inventories may be warranted.

3.3.2.12. Recreation and Visitor Services Fortymile

Fortymile MFP

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 recreational 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. The management decisions to achieve these objectives are listed in Table 3.15.

Table 3.15. Recreation management outlined in the Fortymile MFP (BLM 1980)

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
R 1.1: Implement "Fortymile: A minimum personnel contact visitor management program" which provides interpretive guidelines for the Fortymile area. Coordinate with other local, state, and Federal agencies to insure no duplication of effort.	This action has not been implemented, but remains a valid need.	Interpretive guidelines and coordination with other agencies are valid needs but this decision should be reviewed in light of updated BLM management policies for recreation and visitor services.
R 1.2: Provide interpretive exhibits at selected locations as funds are available, with priorities to be determined by the Area Manager. Other agencies and local residents will be consulted prior to implementation.	To enrich visitor enjoyment and knowledge of the resource area, interpretive exhibits have been installed at targeted locations throughout the corridor.	Yes. Providing interpretive sites increases visitor enjoyment and knowledge. It also enhances management of the area.
R 1.3: Implement the program outlined in Section E-2 of the Cultural Resource Management Plan for Fort Egbert, which includes cooperatively working with the Eagle Historical Society to assure that visitors are adequately informed on the history and uniqueness of the area.	Ongoing. The BLM is working cooperatively with the Eagle Historical Society to complete several projects. BLM has posted a full time employee at Fort Egbert to provide visitor information and tours of the site.	Yes. Fort Egbert is a popular site for visitors to the area. Working cooperatively with the Eagle Historical Society provides better service to visitors and enhances BLM's management.
R 1.4: Establish information stations in cooperation with US Customs stations on the Alaska Highway and the Boundary cutoff.	This action has not been implemented, but remains a valid opportunity in the further development of visitor orientation to the region.	Yes. This decision should be reviewed in light of current land status and management goals for the area.

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
R 1.5: Establish an interpretive display at the Delta and Tok Visitor Centers in cooperation with the Chamber of Commerce from each community and provide visitors with information regarding BLM's role in land management within the Fortymile Resource Area.	Brochures are actively distributed in each of the listed communities and at multiple waysides along the Taylor Highway, ensuring that visitors receive accurate information about BLM-managed public lands in the Fortymile Resource Area.	Yes. All avenues for providing information to the public should be used to the extent possible.
R2.1: Develop a recreation management plan for the Fortymile Area within two years.	This action has not been implemented. It remains valid if the Fortymile is identified as a special recreation management area (SRMA).	Possibly. The revised RMP will identify SRMAs. Recreation management plans will be developed for these areas.
R 2.4: Improve and maintain the bush strip at Joseph.	This has not been implemented.	Possibly. BLM does not undertake maintenance of existing airstrips.
R 2.6: Rehabilitate and maintain designated campgrounds. Incorporate R 2.7: Set up a program for accomplishing maintenance and rehabilitation of recreation structures and facilities on a regular basis and develop standards for accomplishment.	Ongoing. Developed recreation sites and facilities are maintained regularly, in accordance with annual distribution and allocation of funds.	Yes. Existing facilities need to be maintained to provide a safe environment for visitors.
R 2.7: Identify and rehabilitate existing historic trails.	This action has not been implemented, but remains valid.	Yes. A travel management plan will be completed for the area and will identify needed trail maintenance.
R 3.3: Manage the Fortymile and Delta rivers to preserve wild and scenic values. Prepare a written agreement with Anchorage District Office regarding management of the portion of the Delta River withdrawal that lies within the Fairbanks District.	To ensure continued protection of the river's values, the Fortymile NWSR is managed in accordance with those provisions cited in the Fortymile River Management Plan.	Partially. BLM manages designated rivers to preserve wild and scenic values as required by law. The Delta River is not within the Eastern Interior planning area. The Fortymile River Management Plan may be amended through this planning process.

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
R 4.2: Develop an ORV management plan utilizing resource data and public input.	This action has not been implemented, but remains valid.	Yes. Travel management will be addressed during development of the RMP.
R 5.1: Cooperate with other agencies having jurisdictional responsibility to develop an emergency assistance plan for the Fortymile Resource Area.	An emergency assistance plan for the Fortymile Resource Area has not been completed.	Possibly. This decision should be reviewed.

Fortymile River Management Plan

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. The management decisions to achieve these objectives are listed in Table 3.16.

Table 3.16. Current recreation management in the Fortymile River Management Plan (BLM 1983a)

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
Action 5.1: The BLM will continue to maintain the Walker Fork and West Fork Campgrounds within the corridor boundary. Liberty Creek Campground is outside the corridor and available for State selection.	Maintenance of the Walker Fork and West Fork campgrounds is ongoing. The Liberty Creek area is State land.	Yes. Walker Fork and West Fork campgrounds will be maintained.
Action 5.2: The BLM will maintain the boat landings at the South Fork bridge and the Fortymile bridge as access points to the river. Parking will be allowed, but overnight camping will be limited, if necessary, to allow easy access to the river and parking areas.	This action is implemented on a continual basis. Although long-term parking is allowed, overnight camping has been prohibited to allow easy access to the river corridor.	Yes

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
Action 5.3: The BLM will develop interpretive displays near the South Fork bridge, Fortymile bridge, and Wade Creek to interpret the wild and scenic designation and the history of the area. The display at Wade Creek will be installed in cooperation with the mining claimants in the area to avoid conflicts with on-going mining operations.	To avoid signs and other development in the river corridor (other than at access points), interpretive displays were installed at the South Fork and Fortymile bridges. The implementation of a display at Wade Creek has not occurred.	Yes. The need for interpretive displays at Wade Creek should be reviewed.
Action 5.4: The BLM will publish a brochure that will include historical interpretive materials, suggested land use practices, and provide information on safety hazards, including bears, weather, and rapids.	This action has been implemented, via the publication of two interpretive brochures entitled the "Taylor Highway Travel Guide" and "Fortymile National Wild and Scenic River."	Yes.
Action 5.5: The Chicken Guard Station will be upgraded to provide quarters for management personnel and as a focus for maintenance and visitor service activity.	Renovations of the Chicken Guard Station have occurred on an ongoing basis since the late 1990s.	Yes.
Action 6.1: Short term camping (less than 10 days in one location) in the river corridor will generally be allowed without specific authorization. Long term camping in the river corridor will be authorized by permit. Camping will be subject to such provisions as necessary to protect scenic, recreational, fish and wildlife, and other values of the river area.	This action is being implemented on a continual basis. Short term camping (less than 10 days in one location) in association with non-commercial activities is permitted. Long term camping in the river corridor is authorized by permit on a case-by-case basis.	Partially. The long term camping issue associated with mining of state mining claims below the mean ordinary high water level needs to be reviewed.
Action 6.2: Suction dredging on non-navigable stream segments will be limited as follows: dredges with 5 inch or less diameter intakes; scenic and recreational sections only; limited to below mean ordinary high water; etc.	The provisions cited in Action 6.2 are no longer consistent with current management practices for suction dredging.	No. Needs to reflect current management practices. Withdrawal review to determine which areas are opened to mineral entry. Determine if any river sections should be reserved for recreational gold panning.
Action 6.3: Permits are required for all commercial guides or outfitters	To ensure that the values for which the river was designated	Yes. Commercial operations require

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
operating within the river corridor pursuant to 43 CFR 8372.	are maintained, permits are approved on a case-by-case basis for all commercial use within the river corridor.	a permit. This is important for protection of river values.

3.3.2.13. Travel Management Fortymile

Fortymile MFP

The three objectives for travel management in the Fortymile MFP were (1) to provide lands for transportation systems; (2) to regulate user and agency activities to prevent unnatural or accelerated erosion; and (3) to develop and implement a program for the regulated use of off-road vehicles within the Fortymile resource area. The management decisions to achieve these objectives are listed in Table 3.17.

Table 3.17. Current travel management in the Fortymile MFP (BLM 1980)

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
Lands 4.1, 4.2 and 5.3: See section 3.3.2.14 Lands and Realty Fortymile, Table 3.19		
W 3.2: All areas will remain open to winter use for vehicles weighing less than 6,000 pounds. Existing roads and trails will remain open to all vehicles when the ground is frozen to a depth of 6 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; vehicles weighing 6,000 pounds or less will be limited to existing roads or trails except for incidental use.	This action is implemented on an ongoing basis.	Partially: This management action is effective in preventing negative impacts to soils. However, OHV designations and travel management areas will be developed through the Travel Management section of the Eastern Interior RMP, this decision may be revised during that process.
R 4.2: Develop an off road vehicle management plan utilizing resource data and public input.	This action has not been implemented, but remains a valid need in the comprehensive effort to address OHV use.	Yes. Transportation issues will be addressed through the Travel Management section of the Eastern Interior RMP.

Fortymile River Management Plan

The two objectives for travel management in the Fortymile River Management Plan were: (1) To preserve the river and its immediate environment and its existing primitive setting which, although in places shows substantial evidence of man's activity, is pleasing to the eye; and (2) 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. The management decisions to achieve these objectives are listed in Table 3.18.

Table 3.18. Current travel management in the Fortymile River Management Plan (BLM 1983a)

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
Action 1.1: New transportation and utility systems, and relocations of existing roads may be authorized in the scenic and recreational portions of the corridor if there is no reasonable alternative route available.	In the absence of a reasonably alternative route, the development and relocation of new and existing roads remains permissible in the scenic and recreational portions of the corridor.	Yes. Access is a current issue. Transportation issues in the Fortymile subunit will be addressed through the Travel Management section of the Eastern Interior RMP.
Action 1.2: New public road rights-of-way, and other authorizations for transportation and utility systems, may be authorized in the wild portions of the river corridor if three conditions are met.	Implementation of this action remains permissible if such a system were deemed compatible with the purposes for which the unit was established; if no economically feasible alternative existed; and, if authorization of the system would be in the publics best interest.	
Action 1.3: Access to mining claims located prior to ANILCA will be managed under existing regulations in 43 CFR 3809.	This action is being implemented on a continual basis in accordance to the provisions of 43 CFR 3809.	Yes.
Action 1.4: The BLM will work cooperatively with the State of Alaska to identify all rights-of-way pursuant to R.S. 2477 within the river boundaries for administrative purposes.	The State claims numerous rights-of-ways across Federal land under R.S. 2477, including those identified in AS 19.30.400. The validity of these determinations will occur on a case-by-case basis, outside of this planning process.	No. The validity of R.S. 2477 determinations is outside the scope of the planning process.
Action 1.5: Off-road vehicle use, other than vehicles of weighing less than 1500 pounds gross vehicle weight (GVW), will be prohibited without a permit or approved plan of operations.	Ongoing. Vehicles weighing in excess of 1500 pounds GVW are authorized by permit on a case-by-case basis.	Yes. Access is a current issue. It will be addressed through the Travel Management section of the Eastern Interior RMP.

Current Management Decisions	Status	Is Decision Responsive to Current Issues?
Action 1.6: Existing use of motorized boats on scenic and recreational segments will be permitted without specific authorization. Motorized boats will not be permitted 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 use of motorized boats.	This action is being implemented on an ongoing basis.	Yes. This issue will be addressed through the Travel Management section of the Eastern Interior RMP.
Action 2.1: The BLM will not undertake maintenance of existing airstrips.	While the BLM does not undertake maintenance of existing airstrips, informal maintenance by airstrip users is permissible through agreement with the BLM.	Possibly. Airstrips will be addressed through the Travel Management section of the Eastern Interior RMP.
Action 2.2: New airstrips may be authorized in accordance with Actions 1.1, 1.2, and 1.3.	In the absence of a reasonably alternative route, new airstrips may be authorized. However, no new airstrips have been approved.	
Action 2.3: Existing use of gravel bars and winter snows by aircraft will be permitted subject to reasonable provisions to protect the values of the Wild and Scenic River.	This action is being implemented on an ongoing basis.	Yes. Use of motorized vehicles in the river corridor will be addressed in the Travel Management section of the Eastern Interior RMP.

3.3.2.14. Lands and Realty Fortymile

The seven lands objectives in the Fortymile MFP were (1) Make lands available for intensive use and public purposes; (2) Make agriculturally suitable lands available under the appropriate authority; (3) Revoke or modify all withdrawals not serving the purpose for which they were ordered; (4) Provide lands for transportation systems; (5) Inform the public of BLM's public easements across private lands; (6) Identify requirements for new communication sites in the Resource Area; insure coordination between existing and potential communication site users, and insure maximum utilization of existing sites; and (7) Terminate and prevent unauthorized use on public lands in the Resource Area.

Some of these objectives may no longer be valid and need to be reevaluated. Extensive changes in land ownership have occurred in the Fortymile subunit since 1982, making some of the decisions invalid. Land conveyance continues and many thousands of acres of land within this subunit will be conveyed out of BLM ownership over the next few years. Decisions from the Fortymile MFP are listed in Table 3.19.

Table 3.19. Current Management for Lands and Realty Fortymile MFP (BLM 1980)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Lands 1.1: When the need for additional services is identified, make land available, insuring that all parties are aware of the proposal and all have an equal opportunity to apply for the site.	Lands have been conveyed to State of Alaska, Native Corporations, and Native allottees. The majority of the land along the Taylor Highway has been conveyed.	Yes. Lands may be needed for public purposes. Review status and determine which lands if any are appropriate for disposal.
Lands 1.2: Maintain or enhance the availability of public lands within the expansion areas shown in URA Step 4 for urban/suburban expansion.	Lands around Chicken and Eagle have been conveyed to the State and municipality; other BLM lands in the vicinity are withdrawn or within the Fortymile River corridor.	Generally yes. Review land status to determine which lands fit the criteria for supporting community expansion.
Lands 1.3: Convey lands to the City of Eagle for cemetery purposes (USS 4074).	Corrected patent number 50-92-0006 was issued to the City of Eagle for cemetery purposes on October 10, 1991.	No. The action has been completed.
Lands 1.4: Segregate the immediate area of the Walker Fork Campground from mineral locations and leasing.	Yes. When ANILCA was passed, the Walker Fork scenic segment of the Fortymile River was segregated from mineral location and leasing.	Yes. The campground should be segregated to protect BLM's investment in facilities.
Lands 1.5: Establish a program for public use of abandoned structures, BLM cabins on public land and the construction and occupancy of new structures.	The use of existing structures and the construction and occupancy of new structures was addressed by the Alaska Supplement to Bureau Manual 2920 dated 11/2/87.	This decision should be reviewed based on the new cabin policy. There is an interest in cabins on public land.
Lands 1.6: Identify and provide suitable sites for waste disposal near Eagle, Chicken and Boundary by 1983.	This decision was not implemented. Existing sites are being closed. Remaining BLM lands near Chicken are within the river corridor.	No. There is little or no BLM land available for such sites near these communities.
Lands 2.1: Evaluate Federal lands along the Taylor Highway north of Mt. Fairplay and south of Chicken, Alaska, and classify those lands suitable for agricultural development.	This decision has not been implemented. The lands to be evaluated have been conveyed to State of Alaska, Native Corporations, and Native allottees.	No. These lands are no longer under BLM ownership.
Lands 3.1: Consider the possibility of making the Utility Corridor south of Delta Junction available for state selection.	This is outside the planning area. Revocation of PLO 5150 was considered during development of the East Alaska RMP (BLM 2007).	No. Outside the Eastern Interior planning area.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Lands 3.2: Review the recreation site withdrawal (PLO 3432) within the two mile buffer zone of Eagle, Alaska, to determine if the 816 acre withdrawal should be reduced to include only that area currently under intensive use (Ft. Egbert and Eagle Campground).	This decision has not been implemented. The main portions of Fort Egbert buildings are not under PLO 3432.	Yes. All withdrawals will be reviewed as part of the current planning process.
Lands 3.3: Revoke the following withdrawals: Delta administrative site withdrawal (PLO 1599, USS 2777; Blocks 15, 16,17, 18, 19 of USS 3293); Tok Federal reserve (Block 3w, U.S. Survey 2931).	Delta Administrative site was conveyed to the State. Tok Federal Reserve was conveyed to Tanacross Village and Doyon (50-91-0425 & 26).	No. Lands no longer under BLM ownership. Other Federal reserves that need to be addressed may exist.
Lands 4.1: Retain the option to permit a right-of-way (ROW) for the Ladue River railroad by keeping lands along the proposed route free of encumbrances.	No longer applicable. Land has been conveyed to the State.	No.
Lands 4.2: Make land available for airport purposes in the Columbia Flats area (T5S, 23E, FM).	This land is currently a priority selection for a Native corporation and top filed by the State.	No. Land will be conveyed either to the State or Native Corporation.
Lands 4.3: Make lands available for a highway maintenance station within the Eagle two-mile zone.	The State acquired land from BLM for the maintenance station through a land exchange.	No. The action has been completed.
Lands 5.1: Establish information signs on each easement. Such posting will be within the parameters to be established by management regulations.	Only the beginning of the Seventy-mile trail has been marked.	Yes. Easements need to be marked so the public knows where they are located.
Lands 5.2: Prepare and present an information and education program for easements in the local areas of Eagle, Northway, Tok, Dot Lake, Tanacross, Tetlin, and Healy Lake. Informational brochures will be prepared and made available for the public.	This decision has been partially implemented during recent meetings asking for public input on proposed easements.	Yes. The public needs to be informed on the location of easements and allowable uses on those easements.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Lands 5.3: Prepare a transportation plan which will allow access to resources on public and private land. Purchase needed easements on private land or grant rights-of-way on public land where necessary.	The decision to prepare a transportation plan has not been implemented. BLM considers ROW applications as they are received. 17(b) easements have been established on land conveyed to native corporations.	Possibly. BLM still needs to consider requests for rights-of-way and ensure access to public lands. 17(b) easements are established outside the RMP process.
Lands 6.1: Develop a communications master plan for the Resource Area utilizing input from the State of Alaska, Doyon Ltd., NPS, U.S. FWS, Federal Aviation Administration, and other potential communications sites users. The plan would identify requirements for new and existing sites and establish timetables and standards for development, and be completed by 1983.	A master communications plan has not been developed. Each communication site has an individual site plan. Land status has changed substantially since the MFP was approved.	Possibly. This decision should be reviewed during the planning process given changes in land status and current communication needs.
Lands 7.1: Following the establishment of an alternative solid waste disposal site, undertake the clean-up of the present Eagle dumpsite.	Clean up of Eagle dump site is in progress. Alternative site established on non-BLM land.	No. Clean up will be completed. Establishment of alternative site no longer applicable to BLM.
Lands 7.2: Clean up and close the Bureau Dump behind Tanacross Fire Guard Station (18N, R11E., CRM).	Clean up and closure completed in 2007. BLM is still monitoring wells for water quality on the parcel.	No. Land will be conveyed once monitoring wells are no longer needed.
Lands 7.3: Determine if any portion of the unauthorized gravel pit in section 36, T.1S., R.32E., FM, lies on Native Allotment F-14529. Rehabilitate that portion of the pit in trespass.	No portion of the gravel pit was on the Native Allotment. The land has been conveyed to allottee (pat. # 50-91-0263). Gravel pit has been authorized on adjacent BLM land.	No. Issue has been resolved.
Lands 7.4: Begin a public information program including land status maps, school programs, and roadside displays to delineate public lands and define which uses need authorization.	Ongoing. Waysides have been established on the Taylor Highway (see section 3.3.2.12 Recreation). Land status has been constantly changing over the years.	Yes. Providing accurate information to the public enhances land management.

3.3.3. Steese Subunit

The following sections outline existing management decisions in the Steese RMP (BLM 1986a). Decisions are organized by program area. The Steese subunit as defined under the Eastern Interior RMP (Map 1.1) includes additional lands outside the Steese NCA which are not covered by an existing land use plan.

3.3.3.1. Water Resources Steese

One of the goals of the Steese RMP (BLM 1986a) is to improve the water quality of Birch Creek. Management decisions related to achieving improved Birch Creek water quality are listed in Table 3.20.

The two objectives for water resources in the Steese RMP were (1) Develop guidelines for mitigation of water quality degradation; and (2) Maintain State water quality standards for the currently clear-flowing tributaries, such as, Harrington Fork, Clums Fork, Sheep Creek, and South Fork Birch Creek. These continue to be valid objectives which are implemented on an ongoing basis. Mitigation measures to protect water quality are included in all BLM and State placer mine operations in accordance with ADEC Water Quality Standards.

Table 3.20. Current Management for Water Resources in the Steese NCA

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Source: Steese ROD/RMP (BLM 1986a)		
All, surface-disturbing activities will be required to meet water quality requirements (p. 10, Fisheries Management).	Ongoing. BLM works with ADEC to ensure activities permitted by BLM do not exceed Water Quality Standards.	Yes. Stipulations are attached to EAs to mitigate potential adverse impacts to water quality.
All placer mines and other surface disturbances will be required to be rehabilitated in such a way as to minimize future erosion (p. 10, Fisheries Management).	Ongoing. Measures are effective in achieving desired outcomes when applied as site specific stipulations. All placer mines and other surface disturbances are required to be rehabilitated to minimize future erosion.	Yes. Stipulations are attached to EAs for mining plans of operations on an ongoing basis to mitigate potential damage water quality.
All operators producing water-borne effluent must obtain a National Pollutant Discharge Elimination System permit and meet the requirements of that permit. In cooperation with ADEC and EPA, water quality will be monitored along streams to ensure compliance (p. 11, Minerals Management)	Ongoing. BLM works closely with ADEC to ensure effluent from placer-mine activities permitted by BLM do not exceed Water Quality Standards.	Yes.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
BLM will develop a program of erosion abatement and satisfactory reclamation on disturbed ground in the headwaters of Birch Creek. This will involve Federal claims outside of the NCA in order to help improve the water quality of Birch Creek (p. 11).	The program has not been implemented but is still valid.	Yes. But BLM may not have the capacity to implement such a program.
A watershed will be closed to off road vehicle use when, due to erosion and sedimentation or poor trail conditions, more than five percent of the miles of trail become difficult to negotiate with small ATV or other similar vehicles (p. 12, Off Road Vehicles).	Ongoing. BLM works closely with ADEC to ensure activities permitted by BLM do not adversely impact Water Quality.	This decision will be reviewed during development of the Travel Management section of the RMP.
A watershed will be closed to off road vehicle use when water pollution from vehicle trails or disturbances become noticeable in Birch Creek or its major tributaries (p. 12).	This action is implemented on an ongoing basis. BLM works closely with ADEC to ensure activities permitted by BLM do not adversely impact Water Quality Standards.	This decision will be reviewed during development of the Travel Management section of the RMP.
Water quality will be improved in Birch Creek. This will be accomplished by: (1) reducing the amount of sediment released into Birch Creek and its tributaries by placer mines, including those outside of the NCA boundaries and (2) requiring reclamation of ground disturbed by mining to prevent stream sedimentation caused by erosion (p. 16 Water Resources).	This is implemented on an ongoing basis. BLM works closely with ADEC to ensure activities permitted by BLM do not exceed Water Quality Standards.	Yes. Substantial opportunity exists for additional reclamation of abandoned placer mining tailings in Birch Creek watershed.
The BLM will cooperate closely with the ADEC and the EPA 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 Water Quality Standards (p. 16).	This is implemented on an ongoing basis. BLM works closely with ADEC to ensure activities permitted by BLM do not exceed Water Quality Standards.	Yes.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Water quality will be measured periodically during the summer in order to ensure that State water quality standards are being met. The information gained will be used to determine whether or not stipulations attached to mining plans of operation are adequate to protect, water, quality and whether or not the operator is complying with those stipulations (p. 16).	Ongoing. Water quality is measured periodically during open water season to ensure ADEC water quality standards are being met.	Yes. Water quality information is used to determine whether stipulations attached to mining plans of operation are adequate to protect water quality.
A sufficient instream flow will be maintained in Birch Creek to meet the purposes for which the wild river was established. An instream flow study, identified in the Birch Creek River Management Plan, will be conducted to determine how much instream flow is needed. The federally reserved water right for the wild river needs to be quantified (p. 16)	Ongoing. BLM funds an USGS stream gage on Birch Creek above the confluence of 12 mile Creek, providing real-time stream flow. An application for Birch Creek Instream Flow Water Rights was submitted in January 2001 to the Alaska DNR.	Yes. BLM should continue to monitor water quality and quantity and petition ADEC to remove Upper Birch Creek for the 303d list of impaired waters when data shows turbidity is in compliance with standards.
Monitor water quality on mainstream of Birch Creek and on tributary streams to ensure that the goals and objectives of the RMP are met (p. 32).	Water quality is measured periodically on main stem of Birch Creek and intermittently on tributaries to ensure ADEC water quality standards are being met.	Yes. BLM should continue to monitor water quality.
Source: Birch Creek River Management Plan (BLM 1983b)		
Action 4.1: All use authorizations will include measures to control water pollution.	This is implemented through site-specific stipulations, on an ongoing basis. Mitigation measures are effective in achieving desired outcome when applied as site-specific stipulations.	Yes. All use authorizations include measures to control water pollution.
Action 4.2: The Area manager shall cooperate with the ADEC, and where appropriate, the EPA, for the purpose of preventing, eliminating, or diminishing the pollution of river water consistent with the Federal Clean Water Act or Federally Approved State Water Quality Standards.	Ongoing. BLM works closely with ADEC to ensure activities permitted by BLM do not exceed Water Quality Standards. BLM cooperates with other regulatory agencies for the purpose of preventing, eliminating, or diminishing the pollution of river water consistent with the Federal Clean Water Act or Federally	Yes.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
	Approved State Water Quality Standards.	
Action 5.1: A reservation of minimum water flows sufficient for public recreation use and to support the values for which the wild river was designated will be determined in cooperation with the ADNR.	Ongoing. BLM funds an USGS stream gage on Birch Creek, providing real-time stream flow. An application for Birch Creek Instream Flow Water Rights was submitted to the ADNR in 2001.	Yes. ADNR has not processed the instream flow water right application for Birch Creek, filed in January 2001. BLM should work with ADNR to hasten processing of instream flow water right applications.
Action 15.1: A system for the transportation of water, such as a canal, ditch, pipeline, or diversion, may be allowed, provided certain conditions are met (ANILCA Section 1107).	BLM has not issued authorizations for transportation of water, such as a canal, ditch, pipeline, or diversion in the Birch Creek corridor.	Yes. These types of developments will be subject to such conditions as may be necessary to assure that the stream flow of, and transportation on Birch Creek is not interfered with or impeded and that the system is located and constructed in an environmentally sound manner.
Action 15.2: Dams, reservoirs, power houses, flood control dams, levees, and similar developments are prohibited (Wild and Scenic Rivers Act Section 7).	No Action: Dams, reservoirs, power houses, flood control dams, levees, and similar developments are prohibited by the WSR Act.	Yes. Prohibited by WSR Act.

3.3.3.2. Vegetation Communities Steese

The Steese RMP (BLM 1986a) contains management direction for habitat protection under the Wildlife Habitat Management, which emphasizes protection of crucial wildlife habitats. Crucial habitats will be protected through the avoidance and mitigation. Mitigative measures to avoid or minimize possible adverse effects to the habitat and thus, the vegetation will be developed through the environmental assessment process. They also mention the need for wildfire and prescribed fire to improve wildlife habitat and increase vegetative diversity. These are discussed more fully under section 3.3.3.4 Wildlife Management.

Table 3.21. Current Management for Vegetative Communities Birch Creek River Management Plan (BLM 1983b)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Action 17.2: Prepare and maintain an inventory of the vegetative resources within the river corridor.	No on-the-ground inventories have been conducted. Satellite imagery-based landcover mapping has been conducted.	Yes. Further inventories are warranted.

3.3.3.3. Fish Management Steese Subunit

In the Steese RMP, the only objective related to fisheries management was to maintain or improve habitat to support viable self-sustaining populations of fish and wildlife. The Birch Creek River Management Plan (BLM 1983b) included two general management decisions related to fisheries. Current management decisions that were included in the plans to achieve these objectives are listed in Table 3.22.

Table 3.22. Current fisheries outlined in Steese RMP and Birch Creek River Management Plan.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Source: Steese ROD/RMP (BLM 1986a)		
Fish habitat will be managed to maintain the present quality of fish habitat in tributary streams that are largely undisturbed at present. These streams include South Fork Birch Creek, Clums Fork, Sheep Creek, and Harrington Fork. Primary emphasis will be placed on habitat for arctic grayling. The primary management tool is the enforcement of stipulations which are attached to authorizing documents on a case by case basis. (p. 10, Fisheries)	Ongoing. Measures are required on surface mining operations to reduce potential damage to fish habitat and to rehabilitate habitat on completion of mining operations. New inventories are warranted to document habitat use by resident and anadromous fish.	Yes. Management of fish habitat to maintain quality is a valid goal. Stipulations are attached to EAs for mining plans of operations on an ongoing basis to mitigate potential damage to fish habitat and to promote habitat rehabilitation.
Gravel will be extracted in such a manner as to minimize the loss of fish and wildlife and their habitats. (p. 10, Fisheries)	Gravel is commonly extracted from streambeds in mining operations. Measures are required for stream rehabilitation; however, these measures are often incapable of restoring fish habitat to its original state.	Partially. A review should be conducted to determine where it is appropriate to allow gravel extraction from streambeds.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Special stipulations will be placed on development activities in crucial habitat areas such as fish spawning and overwintering areas. Such stipulations could require an alteration in the timing of activities so as to avoid disturbing or disrupting spawning activity. In some cases it may be necessary to select an alternate site. (p. 10, Fisheries)	Ongoing. For example, the timing of overland transport of heavy machinery and equipment may be managed to avoid habitat disturbance. However, an inventory of fish spawning and overwintering areas is needed.	Yes. Crucial habitat areas such as fish spawning and overwintering areas should continue to be protected through special stipulations on development activities. An updated inventory of these habitats may be warranted.
All surface-disturbing activities will be required to meet water quality requirements. (p.10, Fisheries)	Ongoing.	Yes. See section 3.3.3.1 Water Resources Steese Subunit.
All placer mines and other surface disturbances will be required to be rehabilitated in such a way as to minimize future erosion. (p. 10, Fisheries)	Ongoing. An evaluation of mitigation measures used for mining reclamation is warranted.	
Fisheries inventories will be undertaken on Clums Fork, Harrington Fork, Sheep Creek, SF Birch Creek, Preacher Creek, and NF Preacher Creek. This information will be used to evaluate the impacts of development of existing mining claims on those creeks and to formulate appropriate mitigative measures. (p. 35, Fisheries)	Ongoing. A 4-year study to evaluate mining mitigation measures will begin on Harrison Creek in 2008.	Yes. Fisheries inventories and population monitoring are important aspects of fisheries management. New anadromous and resident fisheries inventories may be warranted. The locations of necessary fisheries inventories should be prioritized.
Birch Creek River Management Plan (BLM 1983)		

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Action 9.1: Conduct an inventory of fish, wildlife, and habitat within the river corridor, and continue to monitor the effects of river management actions, population trends, and habitat use	Ongoing. Limited fish resource inventories have been carried out in the Birch Creek River corridor (e.g., Webb et al. 1985, ADF&G 1987).	Yes. Monitoring fish population trends and habitat in Birch Creek is important to ensure that land management actions do not adversely affect fisheries. Objectives for anadromous species in Birch Creek should be addressed.
Action 9.2: Cooperate with the ADF&G to maintain, improve, or increase fish, wildlife, and habitat within the river corridor	Ongoing.	Yes. Coordination with ADF&G and other agencies is important, and occurs on a continuing basis to achieve common management goals.

3.3.3.4. Wildlife Management Steese

The Steese RMP includes several objectives related to wildlife management including managing historical caribou range to meet ADF&G goals and objectives, providing for quality hunting and wildlife viewing opportunities, and maintaining habitat to support viable populations of wildlife. The Birch Creek River Management Plan (BLM 1983b) included three general decisions related to wildlife. The Steese NCA is currently divided into several management units. Decisions in the table below are listed by management unit. Current management decisions that were included in the plans to achieve these objectives are listed in Table 3.23.

Table 3.23. Current wildlife management outlined in the Steese RMP (BLM 1986a)

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Management Common to all Units		
Opportunities for fishing, wildlife viewing, hunting, and trapping will be provided by improving access and management while recognizing the environmental protection. (p. 6)	Ongoing. Evaluated and implemented on a case-by-case basis in NEPA process and in activity planning.	Yes. This attempts to maintain one of values for which area was designated.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Identification and monitoring of wildlife distribution, movements, and use areas will be done through the use of ground and aerial surveys. Information gained will be 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. (p. 6)	Ongoing. Many surveys have been conducted and much information gained, but our ability to determine habitat condition and trend and formulate effective mitigation measures is still limited.	Yes. Continued investigations are still needed. Though this has been a major focus, in some cases, more than identification of distribution, use areas and movements will be necessary to mitigate impacts.
Crucial habitats will be protected through the avoidance or mitigation of possible adverse effects of land use activities and by closing specific areas to mineral development. Areas which will be closed to mineral entry include crucial caribou calving areas in the South Steese and crucial Dall sheep habitat. The Birch Creek Wild River encompasses the presently known nesting habitat for the peregrine falcon, and this area is also closed to mineral entry. (p. 7)	Ongoing. Evaluated and implemented on a case-by-case basis in NEPA process. We do not have many crucial habitats delineated.	Yes. Recognition of crucial habitats remains important. Refinement of the crucial habitats list may be needed.
When specific land use actions are proposed in the Semi-Primitive Units, mitigating measures to avoid or minimize possible adverse effects will be developed through the environmental assessment process, as required by the National Environmental Policy Act, and, in the case of locatable minerals, by the Surface Management Regulations (43 CFR 3809). As a result of this process, restriction or alteration of timing, location, and extent of a proposed land use activity may be required to avoid or minimize adverse effects. (p. 7)	Ongoing. Evaluated and implemented on a case-by-case basis in NEPA process.	Yes. This is an explicit statement of the process and it lists possible restrictions, but other than providing reassurance, may not be necessary as it is normal policy.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Table 9-2 shows crucial habitats and timeframes that aerial and surface use restrictions may be required in the crucial use, areas. For example, restrictions may include 1,500-foot minimum altitude for aircraft and one mile horizontal surface distance from crucial habitat. Rehabilitation of disturbed areas will be required to facilitate stabilization and recovery of vegetation. (p. 7)	Ongoing. These crucial use areas and times are used as guidelines in the NEPA process. Not many crucial habitats have been delineated.	Generally yes. However, these crucial habitats and dates should be reviewed based on more current information. Restrictions may be refined during the planning process.
Emphasis will be 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 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. (p. 7)	Proposals for access are typically considered on a case-by-case basis in the NEPA process and have not necessarily been limited to identified corridors.	Yes. Focuses on maintaining caribou use of the area, one of two special values identified by Congress for the NCA . More specific and/or additional stipulations to maintain suitability for caribou use could be considered during development of the RMP.
Habitat improvement for moose and other species is provided for on a long-term basis through management of wildfire as prescribed in the Alaska Interagency Fire Management Plan: Upper Yukon-Tanana Planning Unit. Additionally, prescribed burns may be used to reestablish or improve habitat for moose and other species. (p. 7)	No prescribed burns have been conducted. However, nearly all of the NCA is in Limited Management Option, allowing for considerable wildfire. Roughly 1/4 of the area burned in 2004 and 2005.	Yes. Assumption that relaxation of fire suppression would result in more prevalence of fire on landscape has proven true. So much so that prescribed fire is not generally thought necessary, except possibly on a site specific basis. With a more natural fire prevalence of fire on landscape, may want to refine fire management goals.
Prescription for Semi-Primitive Motorized Special Management Unit		

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Emphasis will be placed on managing the area to maintain the opportunity for caribou and Dall sheep to utilize present and historical use areas. As a result, 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 (p. 23).	Ongoing. Evaluated and implemented on a case-by-case basis in NEPA process.	Yes. Places special emphasis on caribou sheep habitat protection in this zone. May want to develop specific stipulations and reexamine Unit boundaries.
All operations on leases and mining claims are subject to the following special stipulations. 1) Prior to commencing operations, the operator shall demonstrate that his operation will have no long-term, significant, adverse, effects on caribou habitat or caribou populations; 2) Seasonal restrictions will be imposed between May 1 and June 15, or between August 15 and September 30, if the operation will interfere with caribou calving or caribou migration. (p. 23)	There has not been an operation of the scale that we have asked an operator to conduct this demonstration nor have we imposed seasonal restrictions for caribou.	Yes. Places special emphasis on caribou sheep habitat protection in this zone. Special stipulations should be reviewed during development of the RMP.
Ongoing and additional inventories and monitoring will be conducted, emphasizing identification of crucial use areas, assessment of habitat condition and trends, and assessment of effects of land use activities. Aerial surveys, ground surveys and biotelemetry will be used. (p. 36).	Ongoing. Many surveys have been conducted and much information gained, but our ability to determine habitat condition and trend and formulate effective mitigation measures is still limited.	Yes.
Birch Creek River Management Plan		
Action 9.1: Conduct an inventory of fish, wildlife, and habitat within the river corridor, and continue to monitor the effects of river management actions, population trends, and habitat use. Management priority will be given to peregrine falcon and crucial habitats of caribou, moose, fish, and raptors.	With the exception of wildlife surveys conducted during river floats, inventories of wildlife and habitat within the corridor have been conducted (and continue) as part of larger area inventories.	Yes. Continued monitoring necessary to know effects of river management.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Action 9.2: Cooperate with the ADF&G to maintain, improve, or increase fish, wildlife, and habitat within the river corridor.	Ongoing activity on an area wide basis.	Yes. But cooperation routinely occurs and is consistent with law and policy, so it may not be necessary to explicitly state.
Action 10.1: Hunting, fishing, and trapping are permitted, subject to applicable State and Federal laws and regulations (WSR Act Section 13).	Ongoing.	Yes. Hunting/fishing/trapping continue to be allowed. May not be necessary to explicitly state this in the RMP.

3.3.3.5. Special Status Species Management Steese

The presence of one endangered species (American peregrine falcon) was recognized, and it was denoted a priority species in the Steese RMP. Management for peregrines was assumed to comply with the ESA and was otherwise similar to other priority species. The American peregrine falcon was delisted in 1999 but it is still considered a BLM-AK sensitive species and a priority species.

Table 3.24. Current Management for Special Status Wildlife Steese NCA and Birch Creek

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Source: Steese ROD/RMP (BLM 1986a)		
Priority species will be caribou, Dall sheep, fish, and peregrine falcon (an endangered species). Crucial habitats will be protected through the avoidance or mitigation of possible adverse effects of land use activities and by closing specific areas to mineral development. The Birch Creek Wild River encompasses the presently known nesting habitat for the peregrine falcon, and is also closed to mineral entry.	Ongoing. American peregrine falcon delisted in 1999, but species remains a BLM-AK sensitive and priority species, and distribution has expanded.	Yes. Peregrine falcon remains a BLM sensitive species.
Birch Creek River Management Plan		
Action 9.1: Conduct an inventory of fish, wildlife, and habitat within the river corridor, and continue to monitor the effects of river management actions, population trends, and habitat use. Management priority will be given to peregrine falcon and crucial habitats of caribou, moose, fish, and raptors.	Ongoing. Peregrine falcon inventories have been conducted.	Yes. Peregrine falcon remains a sensitive species; continued monitoring is suggested.
Action 9.2: Cooperate with the ADF&G to maintain, improve, or increase fish, wildlife, and habitat within the river corridor.	Extensive cooperation has occurred; work has been typically focused in areas wider than the river corridor.	Yes. Continued cooperation with ADF&G is necessary for effective management. Management is not

Current Management Decision	Status	Is Decision Responsive to Current Issues?
		typically enacted at the river corridor level.

Special Status Plants

In addition to the general management direction provided by BLM Manual 6840, the following management decision is included in the Steese RMP (BLM 1986a).

Table 3.25. Current Management for Special Status Plants Steese NCA and Birch Creek

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Inventories for sensitive and rare plants will be conducted as required for clearances of proposed surface-disturbing activities. Sites will be 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.	A literature review (Williams and Lipkin 1991) and limited inventories (Parker et al. 2003) have been conducted . Inventory of individual sites of proposed activities is not typically conducted unless sensitive species are suspected. Most plans of operation are approved without site specific surveys.	Yes. Additional broad surveys are necessary. Site specific surveys may be appropriate in habitats likely to support these species. See section 2.1.10 Special Status Plants.

3.3.3.6. Cultural Resources Steese

The Steese RMP does not contain any objectives for cultural resource or paleontological management. It does include the goal of managing lands consistent with multiple use principles and maintenance of environmental quality. The decisions from the Steese RMP and the Birch Creek River Management Plan that apply to cultural resources are listed in Table 3.26.

Table 3.26. Current Management for Cultural and Paleontological Resources Steese NCA and Birch Creek

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Source: Steese ROD/RMP (BLM 1986a)		
Class III site-specific inventories will be conducted prior to any development action in order to identify, protect, or mitigate potentially adverse impacts to significant cultural and paleontological resources.	Largely done. Opportunities to review permits and NEPA documents from internal BLM could be improved. May have resulted in adverse effects to resources.	Yes. Class III inventories help identify, protect, or mitigate potentially adverse impacts to significant resources.

The level of fire suppression will be that necessary to protect life, property, and historical cabins and to prevent escape of fire to areas requiring a higher level of fire suppression.	Ongoing. This policy is enhanced and clarified by a Fairbanks District Office memorandum dated June 2001.	Yes. Current policy has been effective.
Prior to any prescribed burn, the area will be thoroughly investigated to identify any inhabited or historical cabins, other structures, or other critical protection sites, and appropriate measures would be taken to protect them from fire.	Ongoing.	Yes. Protection of cultural resources mandated by Federal law for all Federal actions. Decision could be expanded to all Federal actions, including prescribed fire.
Source: Birch Creek River Management Plan (BLM 1983b)		
Action 13.1: Prepare and maintain an inventory of historic and archaeological values within the Birch Creek river corridor.	Implemented in the past 10 years; 90-95% up-to-date for known sites. Planned and opportunistic Class II and III inventories continue. Individual site files are maintained and updated.	Yes. This decision enhances management and protection of these sites.
Action 13.2: Protect significant cultural resources and mitigate impacts on sites which may adversely be affected by activities within the river corridor.	Ongoing.	Yes. Minimal impacts inside the wild river corridor. Permit process is adequate.

3.3.3.7. Visual Resource Management Steese

Scenic quality is maintained using the Visual Resources Management (VRM) Objectives assigned in the Steese RMP (BLM 1986a). In other parts of the Steese subunit where classes have not been assigned, an Interim Visual Resource Management Class is established according to the process outlined in Handbook H-8410-1 and Visual Resource Contrast Rating is evaluated according to Handbook H-8431-1 on a case-by-case basis. The decision to maintain the scenic quality in the Steese Subunit remains valid. However, current VRM classes will be reviewed during the planning process and may be adjusted based on proposed changes to land allocations and management emphasis.

Table 3.27. Current Management for Visual Resources in the Steese NCA and Birch Creek

Current Management Decision	Status	Is Decision Responsive to Current Issues?
Source: Steese ROD/RMP (BLM 1986a)		

Current Management Decision	Status	Is Decision Responsive to Current Issues?
All Management Units: Scenic Quality will be 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, ORV use, support structures and developments, recreational facilities, etc. (p. 14)	Projects and all NEPA documents are reviewed for impacts to scenic quality and visual resources.	Yes. Provides for maintenance of scenic quality.
The Primitive Management Unit will be managed as a VRM Class II area. 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 by should not attract the attention of the casual observer. (p. 20s)	Projects and all NEPA documents are reviewed for impacts to scenic quality and visual resources.	Assigned VRM management classes will be reviewed during the planning process and may be adjusted based on changes in proposed management activities.
The Semi-Primitive Motorized Restricted Management Unit will be managed as a VRM Class III area. The objective of this class is to partially retain the character of the landscape. The level of change should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Areas of this unit that are determined to be within the critical viewshed for the National Wild River be managed by VRM Class II objectives. These areas will be defined on 1:63,360 scale topographic maps within one year of approval of this plan. (p. 22)	Projects and all NEPA documents are reviewed for impacts to scenic quality and visual resources.	VRM management classes will be reviewed during the planning process and may be adjusted based on changes in proposed management activities.
The Semi-Primitive Motorized Special Management Unit will be managed as a VRM Class III area. The objective of this class is to partially retain the character of the landscape. The level of change should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Areas of this unit that are determined to be within the critical viewshed for Birch Creek Wild River will be managed by VRM Class II objectives. These areas will be defined within one year of approval of this plan. (p. 24)	Projects and all NEPA documents are reviewed for impacts to scenic quality and visual resources.	VRM management classes will be reviewed during the planning process and may be adjusted based on changes in proposed management activities.

Current Management Decision	Status	Is Decision Responsive to Current Issues?
The Semi-Primitive Motorized Management Unit will be managed as a VRM Class III area. The objective of this class is to partially retain the character of the landscape. The level of change should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Areas of this unit that are determined to be within the critical viewshed for Birch Creek Wild River will be managed by VRM Class II objectives. These areas will be defined within one year of approval of this plan. (p. 25)	Projects and all NEPA documents are reviewed for impacts to scenic quality and visual resources.	VRM management classes will be reviewed during the planning process and may be adjusted based on changes in proposed management activities.
Research Natural Areas: There are no Visual Resource Management specific prescriptions.	Projects and all NEPA documents are reviewed for impacts to scenic quality and visual resources.	A VRM class will be assigned to the RNAs during the planning process.
The Birch Creek Wild River corridor will be managed as a VRM Class I area. The objective of this class is to preserve the existing character of the landscape so that it appears unaltered by man. The level of change to the landscape should be extremely low because only very limited management activities should occur. (p. 26)	The river corridor is being managed under VRM Class I objectives. All NEPA documents are reviewed for impacts to scenic quality and visual resources.	Yes. BLM Manual 8351 policy assigns a Class I rating to designated wild rivers.
The Birch Creek Wild River viewshed will be managed as a VRM Class II area. The objective of this class is to retain the existing character of the landscape. The method for determining this viewshed will involve analysis and on-the-ground refinement by a team of at least two people trained in visual assessment. The viewshed consists of areas identified as critical to scenic viewing opportunities associated with the wild river floating experience. Factors to be considered when determining critical viewshed include seen-area, viewing angle, viewing time, and topographic screening. (p. 20)	The river viewshed is being managed under VRM Class II objectives. All NEPA documents are reviewed for impacts to scenic quality and visual resources.	Yes. This area is critical to scenic viewing opportunities associated with the wild river floating experience.
Source: Birch Creek River Management Plan (BLM 1983b)		
Item 14.1: The [Birch Creek] river corridor shall be managed to maintain the natural landscape.	The river corridor is managed under VRM Class I objectives.	Yes.

3.3.3.8. Forestry and Woodland Products Steese

The Steese RMP (BLM 1986a) has no objectives for forest management but provides management direction that forest products be reserved for local use only and that no commercial timber harvest be permitted.

The Birch Creek River Management Plan allows for the noncommercial harvest of fuel wood or house logs for local use, if there is no economically feasible and prudent alternative. Commercial harvest of timber within the river corridor is prohibited. The harvest technique selected shall minimize adverse effects on the resource values of the river corridor.

Table 3.28. Current Management Decisions for Forestry and Woodland Products Steese NCA and Birch Creek

Current Management Decision	Status	Is decision responsive to current issues?
Source: Steese ROD/RMP (BLM 1986)		
Forest products will be reserved for local use only.	Ongoing, but little to no demand.	Yes. There is a limited demand for local use of forest products. Realign decisions to make more compatible with WSR Act guidance.
No commercial timber harvest will be permitted.	Ongoing. BLM has not received any applications for commercial timber harvest.	Generally yes. Little timber of commercial value; not compatible with NCA and wild river designations; consider need for salvage sales.
Birch Creek River Management Plan		
Action 17.1: The manager may issue permits for the noncommercial harvest of fuel wood or house logs, for local use, if there is no economically feasible and prudent alternative. Commercial harvest of timber within the river corridor is prohibited.	Ongoing, but little to no demand.	Yes. Commercial harvest of timber is not consistent with the wild river designation.

3.3.3.9. Minerals Management Steese

As discussed in section 3.3.1.13 Minerals Management All Subunits, the Steese NCA is currently withdrawn from mineral leasing and entry through variety of PLOs and Federal laws. The Birch Creek corridor (within 1/2 mile of the banks) is withdrawn from mineral entry and leasing by the Wild and Scenic Rivers Act as amended. The Secretary of the Interior has the discretion to open the area (excluding lands within 1/2 mile of Birch Creek Wild River) to mineral leasing and location. Mineral material sales are considered on a case-by-case basis.

Table 3.29. Current Decisions for Minerals Management in the Steese RMP (BLM 1986a)

Current Management Decision	Status	Is the Decision Responsive to Current Issues?
Disposal of sand, gravel, rock, and other saleable minerals will be based on need and on conformance with the RMP. (p. 11)	Ongoing on a demand basis.	Generally yes. There may be instances where disposal of mineral materials is appropriate. There may be areas where it should be excluded.
The Primitive Management Unit will remain closed to mineral entry under the 1872 Mining Law and to the leasing of oil and gas, non-energy minerals and geothermal resources. (p. 18)	This unit remains closed.	Generally yes. Roads, equipment, and structures associated with mineral development are not compatible with managing for primitive values. However, the boundary of units identified as primitive may change.
Mineral exploration: Activities which conform to the management prescriptions for the primitive unit and which will not impair its primitive values will be allowed. Permits will generally not be required for helicopter landings. However, the use of off-road vehicles (except snowmachines) will not be permitted. (p. 18)	Not applicable, little exploration.	Given that the primitive management unit is closed to mineral entry and leasing, there is little demand for mineral exploration. A similar decision would be appropriate for those units of the NCA which are opened to mineral development through this planning process.
Since there is no known potential or demand for coal in the area, no lands will be opened to coal leasing. (p. 11)	No lands have been opened.	Yes. Potential for coal in the Steese is low and coal leasing would not be compatible with the purposes for which the area was established.
The Semi-Primitive Motorized Restricted Management Unit will remain closed to mineral entry under the 1872 Mining Law and to leasing of oil and gas, non-energy minerals, and geothermal resources. (p. 21)	This unit remains closed.	Generally yes. This management unit contains caribou calving grounds and important Dall sheep habitat; mineral development may have detrimental effects on these species. Caribou range is a special consideration in the NCA. The boundary of units designated as semi-primitive may change during the planning process.
The Semi-Primitive Motorized Special Management unit will be opened to locatable mineral entry, oil and gas leasing, geothermal leasing, and to leasing of non-energy minerals . All operations on leases and mining claims are subject to the special stipulations to prevent to reduce impacts to caribou. (p. 23)	These units have never been opened to mineral entry or leasing.	The mineral potential, recreational opportunities, and resource values (including caribou habitat) of these units should be examined and a decision made on which lands should be opened to various types of mineral development. In areas that are opened, appropriate leasing stipulations and required operating procedures should be developed. The boundary of units designated as semi-primitive motorized may change during the planning process.
The Semi-Primitive Motorized Management unit will be opened to locatable mineral entry, oil and gas leasing, geothermal leasing, and		

Current Management Decision	Status	Is the Decision Responsive to Current Issues?
to leasing of non-energy minerals. All leasing will be under standard stipulations. (p. 24)		
All Research Natural Areas (RNAs) will remain closed to mineral entry and all types of mineral leasing. (p. 25)	These areas remain closed.	Yes. Mineral development is not compatible with maintenance of RNA values.

3.3.3.10. Recreation and Visitor Services Steese

Current recreation management direction for the Steese NCA is supplied by the: Steese RMP (BLM 1986a); the Recreation Activity Management Plan for the Steese NCA and Related Lands along the Steese Highway (BLM 1993); Special Rules and Regulations for the Steese National Conservation Area et al., (Federal Register 1988); and Designation of Off-Road Vehicle (ORV) Use Areas for the Steese National Conservation Area.

Specific authorization for the Steese RMP comes from the ANILCA. Special values to be considered in planning and management of the area are Birch creek and caribou range. Recreation is a primary use of the NCA, due to the diverse recreational opportunities that exist, which range from backcountry non-motorized uses within the primitive areas, to off-highway vehicle (OHV) uses within the semi-primitive areas.

As discussed in sections 4.24, Recreation and Visitor Services, and 4.2.5, Travel Management, most of the decisions in the following table will be revised based on BLM's new policy regarding Benefits Based Recreation Management and Travel Management. Most of the decisions are generally still responsive to current issues but terminology has changed, boundaries of management units may change, and OHV decisions will be reviewed and possibly revised.

Table 3.30. Current Recreation Management in the Steese NCA and Birch Creek

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
Source: Steese ROD/RMP (BLM 1986a)		
The NCA is currently divided into six management zones based on Recreation Opportunity Spectrum (ROS) classes. These include: Primitive, Semi-primitive Motorized, Semi-primitive Motorized Special, Semi-primitive Motorized Restricted, Research Natural Areas, and Wild River Corridor.		
Prescriptions Common to All Management Units		

Current Management Decisions	**Status**	**Is the Decision Responsive to Current Issues?**
Important recreational resource values that make the Steese NCA unique will be protected. These values include outstanding scenic vistas of high mountain terrain, primitive areas with virtually no evidence of man-made improvements, wildlife viewing opportunities, high ridge hiking opportunities along unmarked trails, unique landforms and geologic features, hunting opportunities, and outstanding opportunities for winter use of remote backcountry through a system of primitive cabins. (p. 5)	Limited mining activities have occurred in the area, which are visible from high ridge line trails such as the Pinnell Mountain Trail. No system of back country cabins has been developed. Special Rules have been implemented to address camping limits, the use of motorized equipment for mineral collection and the use of airboats and hovercraft on the Birch Creek National Wild River.	Yes. Recreation is a primary use of the NCA.
The need for new recreational sites, such as campgrounds, trailheads, parking, float-trip staging areas, etc., within the NCA will be assessed. Areas of expansion and development of summer and winter trail opportunities will be identified. These will include a short trail hiking opportunities from Birch Creek associated with river floating trips in the following drainages: South Fork of Birch Creek, Big Windy Creek, and Sheep Creek. Additional trails may later be identified for development. (p. 5, Recreational Facilities)	Ongoing. The *Recreation Activity Management Plan for the Steese National Conservation Area and Related Lands along the Steese Highway* (Steese RAMP) addressed the development of waysides. Major improvements to the waysides occurred in 1996. Interpretive and information signing is provided at each wayside. A hiking route off of Birch Creek in the South Fork/Big Windy Creek area was identified in 2001. As was a trail connecting Twelvemile Summit with Quartz Creek trail in the White Mountains.	Generally yes. This decision will be reviewed during development of the RMP. General direction for recreational facilities will be addressed for each identified recreation management area. Decisions on specific locations for new facilities will likely be deferred to an activity plan.
A remote cabin program will be established and a system of cabins will be constructed which will accommodate recreational uses, such as float boating, dog mushing, backcountry hiking, and winter uses, etc. A winter trails system associated with the proposed cabin program will be identified for the North Steese Area. (p. 5)	No system of back country cabins or winter trails has been developed.	Generally yes. This decision will be reviewed during development of the RMP. Specific decisions on locations of trails or cabins may be deferred to an activity plan.

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
Trails and recreational development will be located to avoid conflicts with crucial wildlife habitat and environmentally sensitive areas. Trail development will include: (1) developed trailheads with signs, maps, mileage, and other user information; (2) use of wood post or rock cairns to identify trail routes; (3) boardwalks as necessary if wet areas cannot be avoided; (4) a system of public use shelter cabins at appropriate locations, and (5) informational maps, brochures, and similar items desirable for public use. (p. 5)	Ongoing. The Steese RAMP (BLM 1993) addressed development of interpretative panels for the waysides. These were implemented through Intermodal Surface Transportation Efficiency Act and ADOT funding sources. Brochures have been developed for the Pinnell Mountain Trail, Birch Creek, and Eagle Summit. Habitat needs of the Fortymile Caribou Herd (BLM 2000) are be considered when identifying locations for new trails.	Yes. Any development should take crucial wildlife habitat and environmentally sensitive areas into account. Signs, sustainable trail construction, and interpretive materials enhances management.
Opportunities for fishing, wildlife viewing, hunting, and trapping will be provided by improving access and management while recognizing the environmental protection. (p. 5, Human and Recreational Use)	Ongoing. Access for fishing and float-boating was improved at Upper and Lower Birch Creek waysides. Hiking and wildlife viewing opportunities on the Pinnell Mountain Trail were improved with the development of Twelvemile Summit and Eagle Summit waysides.	Generally yes. Supports one of the objectives for the Steese NCA. Provide opportunities for fishing, hunting, and wildlife viewing.
Public information and interpretation will be provided through development of signs, brochures, and maps. Including: (1) visitor information signs at trailheads; (2) maps, brochures, and interpretive information for public handout; and (3) signs and brochures on bear safety. (p. 6, Visitor use management and information)	Ongoing. The Steese RAMP (BLM 1993) addressed development of interpretative panels for the waysides. Brochures have been developed for the Pinnell Mountain Trail, Birch Creek, and Eagle Summit. National Bear Safety Brochures are available at waysides.	Yes. Interpretive materials and public education enhances management.
Special Recreation Use Permits are required for commercial uses such as commercial outfitting and guiding and commercial river trips, etc. (p. 6)	Special Recreation Use Permits are required and implemented for all commercial and competitive events within the NCA including the Pinnell Mountain Trail and Birch Creek.	Yes. Commercial uses require a permit. However, this is not a land use planning decision.

Current Management Decisions	**Status**	**Is the Decision Responsive to Current Issues?**
Visitor use will be monitored to evaluate use patterns, needs, and impacts. This will be accomplished through the use of aerial reconnaissance in primitive areas, traffic counters in developed vehicle access areas, and visitor registers on trails. (p. 6)	Ongoing. Random over-flights are conducted. Traffic counters have been installed at some waysides and along the Pinnell Mountain Trail. These are calibrated with staff observations and visitor registers also located at the waysides. Routine patrols are conducted of the waysides. Annual patrols of Birch Creek and the Pinnell Mountain Trail occur.	Yes. Monitoring for visitor use should continue. This will enhance future management of the area.
Prescriptions for Primitive Management Unit		
The Primitive Management Unit will be managed to protect primitive values along the Pinnell Mountain Trail and in the Mount Prindle/Lime Peak area. These values include outstanding scenic vistas of high mountain terrain, primitive areas with virtually no evidence of man-made improvements, wildlife viewing opportunities and outstanding opportunities for winter use of remote backcountry through a system of primitive cabins. Much of the Pinnell Mountain Trail crosses State land. Although with BLM has acquired a 100-foot-wide ROW for the trail, a cooperative agreement should be made with the State for management of these lands consistent with the values associated with the trail. (p. 18)	Conveyance of certain state selected lands located between the Steese NCA and the Pinnell Mountain Trail, has not occurred. Isolated parcels have been retained under BLM management. This will simplify management on some sections of trail. Some steps have been taken to post signs indicating the Mount Prindle RNA boundary as well as posting the primitive area where ATV routes cross into it. No system of back country cabins has been developed.	Generally yes. The boundaries of the primitive management unit will be reviewed and may be revised during the planning process. Coordination with the State is essential for management of the Pinnell Mountain Trail.
A primitive Recreation Opportunity Spectrum classification will be maintained. (p. 18)	A primitive classification has been maintained. No facilities have been established in the Primitive Area around Mount Prindle or the Pinnell Mountain Trail except for Twelvemile Summit, Eagle Summit, Ptarmigan Creek Shelter Cabin, and North Fork Shelter Cabin.	Generally yes. Although, terminology has changed and boundaries of management units may change.

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
A minimum of six miles of new trails are proposed within this unit. (p. 18)	No system of trails has been developed.	This decision needs to be reviewed. May be deferred to an activity plan.
Prescriptions for Semi-Primitive Motorized Restricted Management Unit		
This management unit will be managed to maintain a semi-primitive motorized ROS classification. Use of light (under 1,500 pounds GVW) off-road vehicles will be allowed without authorization. (p. 21)	Ongoing. An inventory of existing routes was conducted in 2001. Condition surveys of ATV/OHV routes are on-going and are conducted as time and budgetary resources allow.	Generally yes. Terminology has changed, boundaries of management units and OHV designations may change.
A minimum of 12 miles of trail are proposed within this unit. (p. 21)	No system of trails has been developed.	This decision needs to be reviewed. May be deferred to an activity plan.
Prescriptions for Semi-Primitive Motorized Special Management Unit		
This management unit will be managed to maintain a semi-primitive motorized ROS classification. Use of light (under 1,500 pounds GVW) off-road vehicles will be allowed without authorization. (p. 22)	An inventory of existing routes was conducted in 2001. Condition surveys of ATV/OHV routes are on-going and are conducted as time and budgetary resources allow.	Generally yes. Terminology has changed; boundaries of management units and OHV designations may change.
Areas adjacent to the Birch Creek river corridor will be managed to provide recreational opportunities which could be combined with a float trip, such as hiking trails leading from the river to interior areas. The best of such opportunities lie within the drainage of the South Fork of Birch Creek. (p. 22)	A large volunteer project was completed in the South Fork/Big Windy Creek area in 2001, which identified a hiking route possibility located just off of Birch Creek.	Generally yes.
A minimum of 68 miles of trail and five cabins are proposed. (p. 22)	No system of trails or back country cabins have been developed.	This decision needs to be reviewed.
Prescriptions for Semi-Primitive Motorized Management Unit		
This management unit will be managed to maintain a semi-primitive motorized ROS classification. Use of light (under 1,500 pounds GVW) off-road vehicles will be allowed. (p. 24)	An inventory of existing routes was conducted in 2001. Condition surveys of ATV routes are on-going and are conducted as time and budgetary resources allow.	Generally yes. Although, terminology has changed; boundaries of management units and OHV designations may change.

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
A minimum of 12 miles of trail and one cabin are proposed. (p. 24)	No system of trails or cabins has been developed.	This decision needs to be reviewed.
Prescriptions for Research Natural Areas - See also section 3.3.3.13 Special Designations		
Mount Prindle and Big Windy Hot Springs RNAs: With the exception of hiking trails, no surface-disturbing activities allowed, except permitted research projects. Close to off-road vehicles and camping to avoid disturbing research projects. Natural processes, including wildfire, will be allowed to continue with as little interference as possible. Primitive campsites could be established outside the RNA boundaries. Access into the RNA can be gained through developed trails and helispots, which will be improved. Hiking, hunting, and nature appreciation allowed. (p. 25)	Ongoing. A Notice of designated OHV areas for the Steese NCA was published in the Federal Register July 15, 1988. Sign posts were installed at all corners of the Mount Prindle RNA, except one, in 2002. No system of trails has been developed. No helispots have been designated. No primitive campsites have been established outside the boundary. Reports for each RNA were written (Juday 1988a and Juday 1988b).	Generally yes. Mount Prindle is split between the Steese NCA and the White Mountains NRA. These management decisions should be reviewed to eliminate any conflicts in management between the White Mountains RMP and the Steese RMP.

3.3.3.11. Travel Management Steese

Currently the Steese NCA is designated as limited to OHV use. The limitation varies by management unit as described in the table below. As discussed in Chapter 4, section 4.2.5, Travel Management, BLM planning guidance and policy for travel management has changed substantially. All travel management decisions will be revised to meet current guidance and to resolve management issues that have arisen in the past twenty years.

Table 3.31. Current Travel Management Decisions in the Steese NCA and Birch Creek

Current Management Decision	Status	Is Decision responsive to current issues?
Limited OHV designation	Ongoing.	Generally yes.

Current Management Decision	Status	Is Decision responsive to current issues?
The use of vehicles of greater than 1,500 pounds gross vehicle weight (GWV) off a valid ROW will be allowed by authorization only. Such authorization will be given only when necessary to provide access to inholdings or for other purposes, based on analysis of need and compatibility with the RMP. Approval would be subject to conditions designed to minimize the impact to the environment or other land uses. Crossing the wild river corridor would be allowed only if there were no economically feasible and prudent alternatives. Vehicle use could be authorized under a mining plan of operation, with a ROW permit, or by other appropriate means.	Ongoing. A Notice of designated OHV areas for the Steese NCA was published in the Federal Register July 15, 1988.	Generally yes. All OHV designations will be reviewed during development the RMP.
For the most part, use of vehicles of greater than 1,500 pounds GVW off a valid existing ROW will be limited to winter months with adequate snow cover and will be limited to existing trails where practical. Under certain circumstances the AO may authorize summer moves. These include, but may not be 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 ORVs; (4) specialized equipment such as low ground pressure vehicles would be used which would minimize impacts to within acceptable limits; or (5) a specified limited number of trips over a trail would result in impacts within acceptable limits.	Ongoing. Special rules for OHV established 1988 (FR 1988)	Yes. This decision reduces damage to soils and vegetation from overland moves.
An ORV monitoring program will be developed and implemented to document existing trails, their condition, and newly disturbed areas of cross-country use. Information gained will provide a basis for determining rehabilitation needs, for monitoring recovery, and for establishing a threshold as to when impacts are becoming excessive. On an interim basis, an area open to ORV use will be closed or restricted under any of the following four conditions: 1) A watershed will be closed to ORV use when, due to erosion and sedimentation or poor trail conditions, more than five percent of the miles of trail become difficult to negotiate with small 3-wheeler or other	Ongoing. Special rules for OHV established 1988 (FR 1988) An inventory of existing routes was conducted in 2001. Condition surveys of ATV routes are on-going and are conducted as time and budgetary resources allow.	Partially. Monitoring of OHV routes should occur. However, many OHV routes do not have any condition surveys. Need to construct sustainable trails with features that discourage or prevent off-trail

Current Management Decision	Status	Is Decision responsive to current issues?
similar ORVs; 2) A watershed will be closed to ORV use when water pollution from ORV trails or disturbances become noticeable in Birch 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 ORVs, the area will be closed to ORV use from the beginning of breakup to the time when willows and dwarf birch are in full leaf. This will allow the excess moisture from snowmelt to dissipate and the fluffing of the soil caused by winter frost action to settle, thereby reducing the tendency to form ruts from vehicle passage; and 4) ORV use will be restricted or prohibited if necessary to protect wildlife or watershed values.		or cross country travel.
Permanent use restrictions on ORVs require an order signed by the AO and publication in the Federal Register. Signs will be posted at access points to inform the public of use restrictions. However, where the AO determines that ORVs are causing or will cause considerable adverse effects on resource values or other authorized uses, he/she shall immediately close the area or trail affected to the type of vehicle causing the adverse effect until that effect is eliminated and measures have been implemented to prevent a recurrence (43 CPR 8341.2).	Special rules for OHV established (FR 1988). Sign posts installed at waysides and on a few routes indicating restrictions on OHVs. A brochure on OHV limitations is available.	Yes. The AO needs the flexibility to enact temporary closures to OHV use in response to resource degradation.
The recreational use of horses will generally be unrestricted throughout the NCA	Ongoing. Very little horse use occurs.	Yes.
Aircraft use will generally be unrestricted, except in areas of crucial wildlife habitat.	No areas have been designated crucial.	Yes. Very little aircraft use occurs. Crucial habitat needs to be identified.
The Primitive Management Unit is closed to ORVs. Authorization required for the use of any motorized vehicle other than a snowmachine off a valid ROW. The use of snowmachines allowed without authorization.	Ongoing. Special rules for OHV established (FR 1988). The Steese RMP amended the Birch Creek River Management Plan related to ORV use within the river corridor.	Generally yes. Additional posting of travel routes, education or enforcement is needed. Boundaries of primitive unit may change.
Birch Creek Wild River: ORV use is prohibited within the Birch Creek corridor except: During the winter months snowmachines of less than 1,500 pounds GVW are permitted; ORV use for access to inholdings can be authorized under a mining plan of operation, with permit, or by other appropriate means.		

Current Management Decision	Status	Is Decision responsive to current issues?
In RNAs: Closed to off-road vehicles. Hiking trails may be constructed.		
In the semi-primitive motorized restricted, semi-primitive motorized special, and semi-primitive motorized units: No permit required for vehicles of less than 1,500 pounds GVW. Permit Required for use of ORVs of greater than 1,500 pounds GVW off a valid ROW.	Ongoing. Special rules for OHV established (FR 1988).	Yes.

3.3.3.12. Lands and Realty Steese

The Steese RMP (BLM 1986a) provides management direction for the lands and realty program. Existing decisions and their status is outlined in Table 3.32. In general, actions permitted under the Lands Program are considered on a case-by-case basis as applications are received. Other than some conveyance to the State, land within the NCA is not available for disposal actions.

Table 3.32. Current Lands and Realty Decisions Steese RMP (BLM 1986a)

Current Management Decision	Status	Is Decision responsive to current issues?
Four transportation corridors were established. In the North Steese, 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. In the South Steese, two 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 of these corridors follow existing trails into the Birch Creek River corridor, and both cross the Wild River. In accordance with Section 1107 of ANILCA, any authorized transportation system within the Wild River 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 shall be selected to minimize adverse effects on scenic, recreational, fish, wildlife, and other values of the river area. (p. 14)	Corridors are established. No development or improvements within any of the four transportation corridors has occurred. However, a new sustainable access trail route into the Great Unknown Creek area is under consideration.	No. The need for, and location of transportation corridors should be reviewed and revised in light of present and anticipated future needs.

Current Management Decision	Status	Is Decision responsive to current issues?
In order to prevent proliferation of ROW, all future ROW will, as far as possible, be located in one of these four corridors. If it is necessary for a ROW to extend beyond a corridor, existing trails would be followed whenever possible. Several users might be required to use the same ROW and to jointly maintain it. Holders of ROW for roads or trails will be required to allow public access for recreation, unless there is a compelling reason to deny such access. (p. 14)	No development or improvements within any of the four transportation corridors has occurred.	Yes. If corridors are designated, ROW should be located within the corridors to the extent possible. If a ROW cannot be located within a designated corridor, then should follow existing trails, allow pubic access, and issue joint ROW to the extent possible.
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. (p. 15)	This decision has not been implemented as no roads have been constructed.	Yes. Engineering studies for route selections should be conducted.
Land exchanges will be proposed in order to acquire the approximately 14,000 acres of State lands within the boundaries of the NCA. (p. 15)	This exchange has not occurred.	Yes. Acquisition of State inholdings should be considered.
Other realty actions would be permitted if compatible with the land uses designated in this plan. The BLM is in the process of formulating a trapping cabin policy. (p. 28)	Demand for authorizations has been low. BLM is formulating a new cabin policy.	Yes. Other realty actions should be permitted consistent with purposes of NCA.
In order to open lands to mineral entry or mineral leasing, a Public Land Order (PLO) will have to be written to revoke or modify the existing withdrawals. (p.28)	The decision to open lands has not been implemented, thus there has been no need for a PLO.	Yes. If the decision is to open lands to mineral entry or leasing.
The Bureau will have to process applications for ROW for roads, trails, or pipelines which may be developed for access to mineral claims or leases, access for public recreation, or other purposes. (p.28)	Ongoing, but demand for ROW has been low. BLM has reserved ROW for some BLM facilities.	Yes. The need for ROW may increase if lands are opened to mineral entry and leasing.

Current Management Decision	Status	Is Decision responsive to current issues?
The Bureau will work cooperatively with the State of Alaska to identify all ROW claims made pursuant to R.S. 2477 within the Steese NCA boundaries for administrative purposes only. The validity of such claims can only be determined in a court of competent jurisdiction. (p.28)	The validity of R.S. 2477 ROW is outside the scope of the RMP.	No.
The BLM proposes to cooperate with the State of Alaska and with other Federal agencies in the preparation of an analysis of transportation needs involving the respective State and Federal transportation and land managing agencies. The analysis would address the existing and future access needs and propose how best these needs could be met. It would also identify where access routes presently exist and which ones, if any, are duplicative.	This decision has not been implemented.	Generally yes. Transportation issues will be addressed in the Travel Management section of the RMP.

3.3.3.13. Special Designations Steese

The only special designation in the Steese Subunit are the Mount Prindle and Big Windy Hot Springs RNAs; Mount Prindle is split between the White Mountains NRA and the Steese NCA. Management direction for the Mount Prindle (Steese portion) and Big Windy Hot Springs RNAs is provided by the Steese RMP (BLM 1986a).

Table 3.33. Current Management for RNAs in the Steese NCA (Steese ROD/RMP, BLM 1986a)

Current Management Decision	Status	Is Decision responsive to current issues?
Designate Mount Prindle RNA (2,800 acres) and Big Windy Hot Springs RNA (160 acres). (p. 25)	Completed	Yes.
With the exception of hiking trails, no surface disturbing activities will be allowed, except permitted research projects. (p. 25)	Currently being implemented	Yes
These areas will be closed to off-road vehicles and camping to avoid disturbing research projects	Currently being implemented	Generally yes. Decision should be reviewed for consistency with the White Mountains portions of the Mt. Prindle RNA.
All RNAs will remain closed to mineral entry and all types of mineral leasing. (p. 25)	These areas remain closed.	Yes. Mineral development is not compatible with maintaining the values of the RNAs.

Current Management Decision	Status	Is Decision responsive to current issues?
Write a report for each RNA, describing the RNA values and detailing use restrictions (p. 25).	Completed	No. This action has been completed.
Natural processes, including wildfire, will be allowed to continue with as little interference as possible. (p. 25)	Currently being implemented	Yes. May want to reevaluate decision on wildfire based on climate change.

3.3.4. White Mountains Subunit

3.3.4.1. Water Resources White Mountains

Water resource objectives of the White Mountains RMP (BLM 1986) were (1) to preserve the river (Beaver Creek) and its immediate environment in its natural, primitive condition; (2) to preserve the free flowing condition of the waters; and (3) to protect water quality and quantity. Water resource management decisions for the White Mountains NRA are listed in Table 3.34.

Table 3.34. Current Management for Water Resources in the White Mountains NRA and Beaver Creek

Current Management Decision	Status	Is Decision responsive to current issues?
Source: White Mountains ROD/RMP (BLM 1986b)		
Objective 1: Meet existing State water quality standards (p. 3)	Water quality is measured periodically in Beaver and Victoria creeks to ensure ADEC water quality standards are being met.	Yes.
A watershed would be closed to off-road vehicle use when water pollution from vehicle trails or disturbances become noticeable in Beaver Creek or its major tributaries (p. 12, Off-Road Vehicles)	Ongoing, as needed.	Yes. See Table 3.46, Travel Management.
The BLM will cooperate closely, with the ADEC and the EPA 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 (p. 16, Water)	Ongoing. BLM works closely with ADEC to ensure activities permitted by BLM do not exceed Water Quality Standards.	Yes.

Current Management Decision	Status	Is Decision responsive to current issues?
The BLM will cooperate closely with the ADEC and the EPA in the enforcement of State and Federal water pollution laws. All mining operations will be required to keep water-borne effluent within present ADEC and EPA limitations, and reclamation of disturbed ground will be required to prevent erosion resulting in stream sedimentation. These requirements would be enforced under, the Surface Management Regulations, 43 CFR 3809 (p. 16).	Ongoing. BLM works closely with ADEC for the purpose of enforcement of state and Federal water pollution laws.	Yes. Protection of water quality is necessary to provide a quality recreational experience.
Water quality in Beaver Creek wild river will be managed to preserve clear flowing and undisturbed stream and the associated floating and fishing experiences. Water resource management of the Beaver Creek system will be aimed at attaining the State's water quality standard for Beaver Creek (p. 20).	Ongoing. Water quality is measured periodically to ensure ADEC water quality standards are being met.	Yes. Water quality monitoring is an important aspect of water resource management in the planning area.
A water quality monitoring program will be established by setting up sampling points along Beaver Creek and its tributaries and taking samples on a monthly basis during the summer. Sufficient instream flow will be maintained in Beaver Creek to meet the purposes for which the wild river was established. An instream flow study, identified in the Beaver Creek River Management Plan, will be conducted to determine how much instream flow is needed. Although there is a federally reserved water right for the wild river, it needs to be quantified (p. 21)	Ongoing. BLM monitors water quality in Beaver Creek cooperatively with FWS and USGS. BLM quantified stream flow in Birch Creek over a 5 year period; An instream flow water right was approved for Beaver Creek National Wild River in May of 1989 by the Alaska DNR.	Partially. The continuation of water quality monitoring is an important aspect of river management. An instream flow water right has been reserved and is no longer an issue.
Beaver Creek River Management Plan (BLM 1983)		
Action 4.1: All use authorizations will include measures to control water pollution.	Ongoing. Land use authorizations include stipulations: Using accepted techniques, the user must achieve established water quality standards for both water discharge and sewage disposal.	Yes. Measures to control water pollution are needed to ensure land management actions do not adversely affect water quality.

Current Management Decision	Status	Is Decision responsive to current issues?
Action 4.2: The land manager shall cooperate with the ADEC, and where appropriate, the EPA, for the purpose of preventing, eliminating, or diminishing the pollution of river water consistent with the Federal Clean Water Act or Federally Approved State Water Quality Standards.	Ongoing. Water quality is measured periodically to ensure ADEC water quality standards are being met. BLM cooperates with ADEC and EPA.	Yes. Interagency cooperation is important, and occurs on a continuing basis to achieve common management goals.
Action 5.1: A reservation of minimum water flows sufficient for public recreation and to support the values for which the area was designated will be determined in cooperation with the Alaska ADNR.	BLM quantified stream flow in Birch Creek; The ADNR approved BLM Instream Flow Water Rights for Beaver Creek, May 1989. The water right includes reservation of minimum water flows sufficient for public recreation and to support river values.	Yes. Although the instream flow has been reserved, it should be reviewed periodically and maintained or adjusted.
Action 15.1: A system for the transportation of water, such as a canal, ditch, pipeline, or diversion, may be allowed, provided certain conditions are met (ANILCA Section 1107).	BLM has not issued permits for these types of developments. If authorized, they would be subject to such conditions as necessary to assure that the stream flow of, and transportation on Beaver Creek is not interfered with or impeded and that the system is located and constructed in an environmentally sound manner.	Yes. This is a valid decision if any applications for such use are received.
Action 15.2: Dams, reservoirs, power houses, flood control dams, levees, and similar developments are prohibited Wild and Scenic Rivers Act (WSR Act) Section 7.	Ongoing. Reservoirs, power houses, flood control dams, levees, and similar developments are prohibited.	Yes. Such actions are prohibited by the WSR Act. May not be necessary to restate in the RMP.

3.3.4.2. Vegetative Communities White Mountains

The White Mountains RMP (BLM 1986b) contains management direction for habitat protection under the Wildlife Habitat Management section 3.3.4.4 Wildlife Management. There is one decision related to vegetation management under the Beaver Creek River Management Plan (BLM 1983c).

Table 3.35. Current Management Direction for Vegetative Communities Beaver Creek River Management Plan

Current Management Decision	Status	Is Decision responsive to current issues?
Action 17.2: Prepare and maintain an inventory of the vegetative resources within the Beaver Creek river corridor.	No on-the-ground inventories have been conducted other than one brief survey for invasive species (D. Vargas, Kretsinger, unpublished data). Satellite imagery-based landcover mapping has been conducted.	Yes. Additional inventories are warranted but should not be limited to the river corridor.

3.3.4.3. Fish Management White Mountains Subunit

The fisheries-related objectives of the White Mountains RMP are (1) to promote a quality fishing experience in Beaver Creek Wild River and (2) to maintain or improve habitat to support viable self sustaining populations of fish and wildlife. Specific management decisions for fisheries management in the White Mountains RMP and Beaver Creek River Management Plans are listed in Table 3.36.

Table 3.36. Current fisheries management White Mountain NRA and Beaver Creek.

Current Management Decision	Status	Is Decision responsive to current issues?
Source: White Mountains ROD/RMP (BLM 1986b)		
Fish habitat will be managed to maintain and/or enhance fish populations for the use and enjoyment of the recreational users of the NRA. Primary emphasis will be placed on habitat for arctic grayling. (p. 9, Fisheries Management)	Ongoing.	Yes. This remains a valid decision.
Management actions will include development projects to rehabilitate stream and riparian areas such as Nome Creek where past placer mining activity has altered the aquatic environment. (p. 9)	Ongoing. 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.	Possibly. Additional habitat restoration may be necessary in Nome Creek or other areas to meet desired conditions.

Current Management Decision	Status	Is Decision responsive to current issues?
Measures to mitigate the impacts of development on the fishery resource are attached as stipulations to the authorizing documents on a case-by-case basis. (p. 9)	Ongoing.	Yes. Minimizing the impacts of development on fisheries is important.
The gravel would be extracted in such a manner as to minimize the loss of fish and wildlife and their habitats. (p. 9)	This decision is seldom implemented because there are no Federal mining claims and gravel sales are seldom authorized.	Yes. If gravel removal is authorized.
Special stipulations will be placed on development activities in crucial habitat areas such as fish spawning and overwintering areas. Such proponents of all surface-disturbing activities will be required to use the best available technology to reduce siltation and stream turbidity to an acceptable level for fish survival and reproduction. (p. 10)	Ongoing. For example, the timing of overland transport of heavy machinery and equipment may be managed to avoid habitat disturbance. Lubinski (1995) documented Arctic grayling overwintering areas in upper Beaver Creek. An updated inventory of fish spawning and overwintering areas is needed.	Yes. The quality of crucial habitat areas such as spawning and overwintering areas should continue to be protected. An updated inventory of these habitats may be warranted.
All placer mines and other surface disturbances will be required to be rehabilitated in such a way as to minimize future erosion. (p. 10)	Ongoing. An evaluation of measures used for mining reclamation began on Harrison Creek in 2008.	Yes.
Beaver Creek fish habitat and riparian areas will be maintained to support viable self-sustaining populations of fish and to provide a quality fishing experience. This includes an evaluation of activities in the remainder of the NRA which may have negative effects on Beaver Creek. (p. 18)	Ongoing. The Arctic grayling fishery in Nome Creek is now catch and release only. Assessments of the Arctic grayling and salmon populations have been conducted in Nome Creek and Beaver Creek.	Yes. The maintenance of fish habitat and riparian areas to support viable, self sustaining populations of fish and quality recreational opportunities is important.

Current Management Decision	Status	Is Decision responsive to current issues?
Restoration of fish habitat and riparian areas along Nome Creek (with the exception designated gold panning areas) will be attempted. Mitigative measures will be formulated to cope with the impacts of the development of existing mining claims. A plan and methodology for the restoration and rehabilitation of the stream and associated riparian areas will be developed. (p. 23)	Ongoing. Major construction is complete, and rehabilitation of riparian vegetation and fisheries habitat continues. Examples of rehabilitation activities include stream channel modification, tailings piles recontouring, bank stabilization, and revegetation activities. Approximately 5.5 miles of stream channel and 210 acres of floodplain and riparian habitat have been reclaimed.	Generally not. Nome Creek restoration has been ongoing since 1991. Further habitat rehabilitation measures may be necessary in the future, but major restoration and construction work has been completed. There are no existing mining claims in the NRA.
An inventory of the Nome Creek fishery will be conducted to assess the opportunities for habitat improvement and assist in project planning for the rehabilitation of Nome Creek. (p. 38)	Completed. The Nome Creek fishery has been inventoried and an assessment of the Arctic grayling population was completed in 2000 in cooperation with ADF&G (Fleming and McSweeny 2001).	No. Project is mostly complete. Additional monitoring may be warranted.
Inventories will be conducted on Bear Creek and Champion Creek to determine present habitat quality and fish use. This information will be used to evaluate impacts from development of existing mining claims on those creeks and to formulate appropriate mitigative measures. (p. 38)	Fisheries inventories were conducted in Bear and Champion creeks in 1985 and 1986 (Kretsinger 1986). An evaluation of mining impacts was not included in these studies.	No. Stated inventories were completed. There is no valid mining claims in Bear or Champion creeks. Inventories may be warranted in other areas.
Beaver Creek River Management Plan (BLM 1983c)		

Current Management Decision	Status	Is Decision responsive to current issues?
Action 9.1: Conduct an inventory of fish, wildlife, and habitat within the river corridor, and continue to monitor the effects of river management actions, population trends, and habitat use	Ongoing. Several fish resource inventories have been carried out in Beaver Creek, focusing on Arctic grayling and salmon populations.	Yes. Monitoring fish populations and fishery habitat is important to ensure that land management actions do not adversely affect fisheries.
Action 9.2: Cooperate with the ADF&G to maintain, improve, or increase fish, wildlife, and habitat within the river corridor	Ongoing.	Yes. Coordination with other agencies is important to achieve common management goals.

3.3.4.4. Wildlife Management White Mountains

Guidance for wildlife management activities in the White Mountains is provided by the White Mountains RMP (BLM 1986b). Two of the objectives of the White Mountains RMP are: 1) to provide opportunities for hunting, trapping, and wildlife viewing; and 2) to maintain or improve habitat to support viable, self-sustaining populations of wildlife. Additional guidance is provided by the Beaver Creek River Management Plan (BLM 1983c).

Table 3.37. Current wildlife management in the White Mountains NRA and the Beaver Creek

Current Management Decision	Status	Is Decision responsive to current issues?
Source: White Mountains ROD/RMP (BLM 1986b) - Management common to all Units		
Trails and recreational development will be located to avoid conflicts with crucial wildlife habitat and environmentally sensitive areas. (p. 6, Recreation Management)	Ongoing. Evaluated and implemented on a case-by-case basis in NEPA process and in development planning.	Yes. ANILCA directs BLM to manage the area for the conservation of wildlife, among other values.
Opportunities for fishing, wildlife viewing, hunting, and trapping would be ensured. Fish and wildlife values are among the most significant recreation attractors to the White Mountains NRA. (p. 6)		

Current Management Decision	Status	Is Decision responsive to current issues?
Identification and monitoring of wildlife distribution, movements, and use areas will be done through the use of ground and aerial surveys. Information gained from monitoring will be used to assess the effects of land use activities, determine habitat condition and trends, and formulate measures to mitigate possible adverse effects on wildlife from development such as mining and the construction and use of roads. (p. 7)	Many surveys have been conducted and much information gained, but our ability to determine habitat condition and trend, and formulate effective mitigation measures is still limited.	Yes. Continued investigations are needed. Though this has been a major focus, in some cases, more than identification of distribution, use areas and movements will be necessary to mitigate impacts.
Crucial habitats (listed in RMP/ROD Table 9-1) will be protected through the avoidance of possible adverse effects of land use activities, through mitigation, and by withdrawing specific areas from certain land use activities. (p. 7)	Ongoing. Evaluated and implemented on a case-by-case basis in NEPA process. Not many crucial habitats have been delineated.	Yes. Recognition of crucial habitats remains important. Refinement of the crucial habitats list may be needed.
When specific land use actions are proposed in the Semi-Primitive Motorized Unit, mitigative measures to avoid or minimize possible adverse effects will be developed through the environmental assessment process, as required by NEPA and, in the case of lode leasing or valid existing rights, by 43 CFR 3809. It may be necessary to restrict or alter the timing, location, and extent of a proposed land use activity to avoid or minimize adverse effects. (p. 7)	Ongoing. Evaluated and implemented on a case-by-case basis in NEPA process. No mining claims remain in the NRA and leasing of lode minerals has not occurred.	Yes. Avoiding or minimizing impacts remains valid. However this decision is an explicit statement of the process and it lists possible restrictions, but other than providing reassurance, it may not be necessary as it is normal policy.
Table 9-2 (of the RMP/ROD) lists crucial use areas and the times during which special restrictions may be required in these areas. These restrictions prohibit surface movement within one mile of the area or the use of aircraft under an altitude of 1,500 feet. (p. 7)	Ongoing. These crucial use areas and times are used as guidelines in the NEPA process. Not many crucial habitats have been delineated.	Generally yes. It explicitly lists crucial habitats and dates. Refinement of this list may be needed.

Current Management Decision	Status	Is Decision responsive to current issues?
Habitat improvement for moose and other species is provided for on a long-term basis through management of wildfire as prescribed in the Alaska Interagency Fire Management Plan: Upper Yukon-Tanana Planning Unit. Additionally, prescribed burns may be used to reestablish or improve habitat for moose and other species. (p. 7)	Ongoing. One prescribed burn was conducted in 1987. All of the NRA has been placed in Limited Management Option, allowing for considerable wildfire. Roughly 1/4 of the area burned in 2004 and 2005.	Yes. Assumption that relaxation of fire suppression would result in more prevalence of fire on landscape has proven true. So much so that prescribed fire is not generally thought necessary, except possibly on a site specific basis. With a more natural fire prevalence on landscape, fire management goals may need refining.
Source: Beaver Creek River Management Plan (BLM 1983c)		
Action 9.1: Conduct an inventory of fish, wildlife, and habitat within the river corridor, and continue to monitor the effects of river management actions, population trends, and habitat use. Give management priority to peregrine falcon and crucial habitats of caribou, moose, fish, and raptors.	With the exception of wildlife surveys conducted during river floats, inventories of wildlife and habitat within the corridor have been conducted (and continue) as part of larger area inventories.	Yes. Continued monitoring is necessary to understand and reduce the effects of river management on wildlife.
Action 9.2: Cooperate with the ADF&G to maintain, improve, or increase fish, wildlife, and habitat within the river corridor.	Ongoing activity on an areawide basis.	Yes. Coordination with other agencies is important to achieve common management goals. Cooperation routinely occurs, so it may not be necessary to state.
Action 10.1: Hunting, fishing, and trapping are permitted, subject to applicable State and Federal laws and regulations (WSR Act Section 13).	Ongoing. Hunting, fishing, and trapping are allowed.	Yes. But may not be necessary to explicitly state this.

3.3.4.5. Special Status Species White Mountains

Special Status Fish

The current management of Beaver Creek Chinook salmon is determined by BLM Manual 6840 and the management decisions set forth in the White Mountains RMP and in the Beaver Creek River Management Plan, which are listed in Table 3.36 in Section 3.3.4.3 Fisheries Management. BLM's existing White Mountains RMP does not contain management decisions specifically related to Beaver Creek Chinook salmon because they were not listed as a BLM-Alaska sensitive species until 2004. The BLM applies stipulations to permitted activities with the intent of minimizing potential erosion and water quality degradation in order to protect Beaver Creek Chinook salmon on a case-by-case basis.

Special Status Wildlife

In the White Mountains RMP (BLM 1986b) the presence of one endangered species (American peregrine falcon) was recognized. The American peregrine falcon has since been delisted and it is no longer listed under the ESA. There is little other guidance in the White Mountains RMP for special status species. The management decisions listed in Table 3.38 pertain to special status wildlife species to some degree.

Table 3.38. Current Management for Special Status Wildlife White Mountains NRA and Beaver Creek

Current Management Decision	Status	Is Decision responsive to current issues?
Source: White Mountains ROD/RMP (BLM 1986b)		
The priority species will be caribou, Dall sheep, fish, and peregrine falcon (an endangered species). Crucial habitats will be protected through the avoidance of possible adverse effects of land use activities, through mitigation, and by withdrawing specific areas from certain land use activities. Beaver Creek Wild River encompasses presently known nesting habitat for peregrine falcon, and this area is closed to mineral leasing.	Ongoing. American peregrine falcon was delisted in 1999, but remains a BLM-Alaska sensitive and priority species and distribution has expanded. Closure of some areas to motorized vehicles after April 15 has remained post-delisting.	Yes. List of priority species should be reviewed during the planning process. Closure to mineral leasing is appropriate for protection of falcon nests.
Source: Beaver Creek River Management Plan (BLM 1983c)		
Action 9.1: Conduct an inventory of fish, wildlife, and habitat within the river corridor, and continue to monitor the effects of river management actions, population trends, and habitat use. Management priority will be given to peregrine falcon.	Ongoing. Peregrine falcon inventories have been conducted. Management of special status species not typically enacted at the river corridor level.	Yes. Peregrine falcon remains a sensitive species; monitoring should continue.

Special Status Plants

In addition to the general management direction provided by BLM Manual 6840, the following management decision (Table 3.39) is included in the White Mountains RMP (BLM 1986b).

Table 3.39. Current Management for Special Status Plants White Mountains RMP (BLM 1986b)

Current Management Decision	Status	Is Decision responsive to current issues?
Inventories for sensitive and rare plants will be conducted as required for clearances for proposed surface-disturbing activities. Sites will be 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. (p. 17)	A literature review (Williams and Lipkin 1991) and limited inventories (Parker et al. 2003) have been conducted. Inventory of individual sites of proposed activities is not typically conducted unless sensitive species are suspected. Additional broad surveys are necessary.	Yes. Modification of proposed actions to protect special status species is appropriate.

3.3.4.6. Cultural Resources White Mountains

The White Mountains ROD/RMP provides guidance for management of cultural resources. Federal laws and regulations, and BLM manuals and handbooks provide additional guidance as discussed in section 3.3.1.7 Cultural Resources, Management Common to All Subunits.

Table 3.40. Current Management for Cultural Resources White Mountains NRA and Beaver Creek

Current Management Decision	Status	Is Decision responsive to current issues?
Source: White Mountains RMP (BLM 1986b)		
Class III site-specific inventories will be conducted prior to any surface-disturbing activity to identify, evaluate, and mitigate any adverse impacts to resources which may be eligible for placement on the National Register of Historic Places. Historic structures will be evaluated for recreational use. (p.15)	Ongoing. Improvement in the past 10 years. Opportunities to review permits and NEPA documents from internal BLM actions has not always been what it could be. May have resulted in adverse effects to resources.	Yes. These types of inventories help BLM to avoid or mitigate impacts to cultural resources.
The level of fire suppression will be that necessary to protect life, property, and historical cabins and to prevent escape of fire to areas requiring a higher level of fire suppression. (p.27)	Ongoing. This policy is enhanced and clarified with an Fairbanks District Office memorandum dated June 2001.	Yes. Current policy has been effective.
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. (p.27)	Ongoing. Not sure why prescribed fire is emphasized, when the same decision is mandated by Federal law for all Federal actions.	Yes. Protection of cultural resources mandated by law for all Federal actions. Decision could be clarified to all Federal actions, not just fire.

Current Management Decision	Status	Is Decision responsive to current issues?
Source: Beaver Creek River Management Plan (BLM 1983c)		
Action 13.1: Prepare and maintain an inventory of historic and archaeological values within the river corridor.	Implemented in the past 10 years. About 90-95% up-to-date for known sites. Planned and opportunistic Class II and III inventories continue to the present. Individual site files are maintained and updated.	Yes.
Action 13.2: Protect significant cultural resources and mitigate impacts on sites which may adversely be affected by activities within the river corridor.	Ongoing.	Yes. Minimal impacts inside the wild river corridor. Permit process is adequate.

3.3.4.7. Paleontological Resources White Mountains

There is no discussion of paleontological resources in the Beaver Creek River Management Plan. There is one management decision in the White Mountains RMP which pertains to paleontological resources (Table 3.41).

Table 3.41. Current Management for Paleontological Resources White Mountains RMP (BLM 1986b)

Current Management Decision	Status	Is Decision responsive to current issues?
Class III site-specific inventories will be conducted prior to any surface-disturbing activity to identify, evaluate, and mitigate any adverse impacts to resources which may be eligible for placement on the National Register of Historic Places. Rationale: Class I literature search, class II inventory of Beaver Creek and Pleistocene faunal material indicate that potentially significant cultural and paleontological resources may exist within the NRA.	Ongoing. Projects and NEPA documents are reviewed for impacts to Paleontological resources. Field inventories of ground disturbing activities for paleontological resources does not occur due to staffing constraints.	Yes. Field inventories may be appropriate. However, BLM would need to hire or contract a paleontologist, as specified in the BLM Manual 8270.

3.3.4.8. Visual Resource Management White Mountains

Scenic quality are maintained using the Visual Resources Management (VRM) Objectives assigned in the White Mountains RMP (BLM 1986b). In other parts of the White Mountains subunit, where classes have not been assigned, an Interim Visual Resource Management Class is established according to the process outlined in Handbook H-8410-1 and Visual Resource Contrast Rating is evaluated according to Handbook H-8431-1 on a case-by-case basis. Current VRM classes within the White Mountains will be reviewed during the planning process and may be adjusted based on proposed changes to land allocations and management emphasis.

Table 3.42. Current Management for Visual Resources in the White Mountains NRA and Beaver Creek

Current Management Decision	Status	Is Decision responsive to current issues?
Source: Record of Decision and RMP for the White Mountains NRA (BLM 1986b)		
All Management Units: Scenic Quality would be maintained by adhering to VRM objectives (BLM Manual 8400) while implementing a program of visual assessment of all surface-disturbing activities, such as, new access trails, mining activities, ORV use, support structures and developments, recreational facilities. Specific areas with outstanding scenic qualities of special concern are the high ridge complex within the Primitive Management Unit and the river viewshed (p. 15)	Projects and all NEPA documents are reviewed for impacts to scenic quality and visual resources in accordance with BLM Manual 8400.	Yes. Provides for maintenance of scenic quality.
The Beaver Creek National Wild River viewshed and the entire Primitive Management Unit would be managed as a VRM Class II area. 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. (p. 20)	Ongoing. Projects are reviewed for impacts to scenic quality and visual resources.	Yes. Assigned VRM management classes will be reviewed during the planning process and may be adjusted based on changes in proposed management activities.
Semi-Primitive Management Unit: The White Mountain Trail (aka Summit Trail and Wickersham Creek Trail) will be managed as a VRM Class II area. (p. 25)	Ongoing. Projects are reviewed for impacts to scenic quality and visual resources.	Yes. Assigned VRM management classes will be reviewed and may be adjusted based on changes in proposed management activities.
Areas of the Semi-Primitive Management Unit that are within the critical viewshed for Beaver Creek Wild River will be managed by VRM Class II objectives. These areas will be defined on 1:63,360 scale topographic maps within one year of approval of this plan. (p. 26)	Ongoing. Projects are reviewed for impacts to scenic quality and visual resources.	Yes. Assigned VRM management classes will be reviewed and may be adjusted based on changes in proposed management activities.
This rest of the Semi-Primitive Management Unit will be managed as a VRM Class III area. The objective of this class is to partially retain the character of the landscape. The level of change should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. (p. 21)	Ongoing. Projects are reviewed for impacts to scenic quality and visual resources.	Assigned VRM management classes will be reviewed and may be adjusted based on changes in proposed management activities.

Current Management Decision	Status	Is Decision responsive to current issues?
Research Natural Areas: There are no Visual Resource Management specific prescriptions. (p. 25)	Ongoing. Projects are reviewed for impacts to scenic quality and visual resources.	Visual Resource Management class will be assigned to the RNAs.
The Beaver Creek Wild River corridor will be managed as a VRM Class I area. The objective of this class is to preserve the existing character of the landscape so that it appears unaltered by man. The level of change to the landscape should be extremely low because only very limited management activities should occur. (p. 21)	Ongoing. The river corridor is managed under VRM Class I objectives. Projects are reviewed for impacts to scenic quality and visual resources.	Yes. BLM Manual 8351 policy assigns a Class I rating to designated wild rivers.
The Beaver Creek Wild River Corridor viewshed will be managed as a VRM Class II area. The method for determining this viewshed will involve analysis and on-the-ground refinement by a team of at least two people trained in visual assessment. The viewshed consists of areas identified as critical to scenic viewing opportunities associated with the wild river floating experience. Factors to be considered when determining critical viewshed include seen-area, viewing angle, viewing time, and topographic screening. (p. 21)	Ongoing. The river viewshed is managed under VRM Class II objectives. Projects are reviewed for impacts to scenic quality and visual resources.	Yes. This area is critical to scenic viewing opportunities associated with the wild river floating experience.
Source: Beaver Creek River Management Plan (BLM 1983c)		
Action 14.1: Scenic Quality The river corridor shall be managed to maintain the natural landscape	All NEPA documents are reviewed for impacts to scenic quality and visual resources.	Yes. BLM Manual 8351 policy assigns a Class I rating to designated wild rivers.

3.3.4.9. Forestry and Woodland Products White Mountains

The White Mountains RMP (BLM 1986b) and Beaver Creek River Management Plan provide management direction for forest products. Current decisions in the White Mountains RMP and Beaver Creek River Management Plan are listed in Table 3.43.

Table 3.43. Current Management for Forestry and Woodland Products White Mountains NRA and Beaver Creek

Current Management Decision	Status	Is decision responsive to current issues?
Source: White Mountains ROD/RMP (BLM 1986b)		

Current Management Decision	Status	Is decision responsive to current issues?
Forest products will be reserved for local use only. (p. 16)	Ongoing on a demand basis. Only one application has been received and authorized for personal use.	Yes. There is limited demand for local use of forest products; Authorize through free-use permits; realign to make more compatible with WSR Act guidance.
No commercial timber harvest would be permitted. (p. 16)	Ongoing. BLM has not permitted any commercial harvest.	Yes. Little timber of commercial value: not economical; not compatible with NRA and wild river designations. Salvage sales may be appropriate.
Monitoring would be done to ensure that the authorized amount of forest products have been taken by the applicant from the location indicated in the permit and that permit stipulations have been followed.	Ongoing. BLM monitors permits to ensure stipulations are followed.	Yes. If use is authorized, it needs to be monitored.
Permit stipulations could include winter cutting and movement, maintaining a set distance from waterways, and lopping and scattering slash.	BLM includes stipulations developed through the NEPA process for all applications.	Partially. These permit stipulations should be reviewed. Required operating procedures may be developed through the RMP.
Source: Beaver Creek River Management Plan (BLM 1983c)		
Action 17.1: The manager may issue permits for the noncommercial harvest of fuel wood or house logs, for local use, if there is no economically feasible and prudent alternative to doing so. Commercial harvest of timber within the river corridor is prohibited.	Ongoing. Demand for noncommercial harvest is low. Commercial harvest has not been permitted.	Yes. Commercial harvest of timber is not consistent with the wild river designation. Noncommercial harvest may be appropriate.

3.3.4.10. Minerals Management White Mountains

ANILCA provides special and specific direction on how to manage minerals in the White Mountains NRA (sections 402, 404, 1010 and 1312 of ANILCA). As discussed in section 3.3.1.13 Minerals Management All Subunits, the NRA is currently withdrawn from mineral leasing and entry through public land orders and ANILCA. The Beaver Creek river corridor (within 1/2 mile of the banks) is withdrawn from mineral entry and leasing by the Wild and Scenic Rivers Act as amended. The Secretary of the Interior has the discretion to open the area (excluding Beaver Creek Wild River) to mineral leasing, including leasing of locatable minerals.

Table 3.44. Current Management for Minerals Management in the White Mountains RMP (BLM 1986b)

Current Management Decision	Status	Is the Decision Responsive to Current Issues?
All operators of valid existing claims will be required to file a plan of operations or notice. A reclamation plan must be included. (p. 10)	Not applicable	No. There are no longer any valid mining claims in the White Mountains NRA.
In accordance with ANILCA, new disposals of locatable minerals within the NRA can only be made through a leasing process. No lands within the NRA will be opened to the leasing of placer deposits. However, the leasing of lode deposits will be allowed. (p. 11)	No leasing of locatable minerals has occurred. Lands are still withdrawn from leasing.	Partially. The only way that new disposal of locatable minerals can occur is through a leasing process. The decision to allow leasing of lode deposits should be reevaluated.
In accordance with 43 CFR 3201.1-6 and 43 CFR 3400.2, neither coal nor geothermal leasing is allowed within the NRA. (p. 11)	Ongoing. Neither coal or geothermal leasing is allowed.	Generally yes. There is no coal potential and leasing would not be consistent with the values of the NRA. The White Mountains is not a known geothermal potential area.
Disposal of sand, gravel, rock, and other saleable minerals under 43 CFR 3600 will be made if such disposals are compatible with the other provisions of this plan. (p. 11)	Ongoing	Yes. There may be situations where mineral material disposal is appropriate within the NRA.
The Primitive Management unit will remain closed to all mineral leasing. (p. 18)	Ongoing. This unit remains closed.	Yes. Roads, equipment, and structures associated with mineral development are not compatible with managing for primitive values. The boundary of units designated as primitive may change.
Mineral Exploration: Activities which conform to the management prescriptions for the primitive unit and which will not impair the unit's primitive values will be allowed. Permits will generally not be required for helicopter landings. However, the use of off-road vehicles (except snowmachines) will not be permitted. (p. 18)	Little demand for exploration.	No. Since leasing and mineral location is not allowed in the primitive unit, it is unlikely that there will be much demand for mineral exploration. This decision should be reevaluated.

Current Management Decision	Status	Is the Decision Responsive to Current Issues?
Semi-Primitive Motorized Management Unit: Lode deposit leasing will be permitted. This area will also be opened to oil and gas leasing and other leasable minerals. Placer mining, except for those claims with prior rights, will not be permitted. (p. 23)	Unit closed to leasing. There are no valid existing mining claims. ANILCA withdraws it from location of new mining claims.	The mineral potential, recreational opportunities, and resource values of this unit should be examined and a decision made on which lands should be opened to leasing. In areas that are opened, appropriate leasing stipulations and required operating procedures should be developed. The boundary of units designated as semi-primitive may change during the planning process.
All Research Natural Areas will remain closed to mineral entry and all types of mineral leasing.	These areas are closed.	Yes. Mineral development is not consistent with maintaining RNA values.

3.3.4.11. Recreation and Visitor Services White Mountains

Management direction for the White Mountains NRA is supplied by the White Mountains RMP (BLM 1986b), White Mountains Special Recreation Area Management Plan (BLM 1988), and Beaver Creek River Management Plan (BLM 1983c). Additional management guidance is provided by *Notice of Special Rules and Regulations for the White Mountains National Recreation Area et al.* (FR 1997) and *Designation of Off-Road Vehicle (ORV) Use Areas for the White Mountains National Recreation Area* (FR 1988). These management decisions class are as described in Table 3.46.

As discussed in sections 4.2.4, Recreation and Visitor Services, and 4.2.5, Travel Management, most of the decisions in the following table will be revised based on BLM's new policy regarding Benefits Based Recreation Management and Travel Management. As recreation use increases across the White Mountains, some of the management zones or units may no longer be relevant to current levels of demand and, more importantly, to the desires (experiences and beneficial outcomes) of recreational users. Decisions concerning designation of ROS categories are also currently inadequate. The nature, or setting, of many areas could have changed due to increased visitation and use.

Table 3.45. Current Recreation Management in the White Mountains NRA and Beaver Creek

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
Source: White Mountains RMP (BLM 1986b)		
The White Mountains NRA is currently divided into four specific management zones based on ROS classes: Primitive, Semi- Primitive motorized, Beaver Creek, and Research Natural Areas.		
Prescriptions Common to All Management Units		

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
Important recreational resource values that make the White Mountains NRA unique will be enhanced and protected. These values include the outstanding scenic quality of the view shed, the natural state of the river corridor, water quality of the river system, fishing and hunting opportunities, wildlife viewing, short hiking opportunities from the river, and unique landforms/geologic formations, such as, the White Mountains, Windy Gap Arch, Serpentine Slide, and Victoria Mountain. (p. 5 Recreation Management)	Ongoing. Access development in the form of trails, roads, public use cabins, campgrounds, interpretive waysides, and river boat launch sites have been constructed. Resource protection has been accomplished primarily by the regulations described by management unit: Primitive, Semi-Primitive Motorized, Research Natural Areas, and Beaver Creek corridor. Management Unit designations define seasonal modes of travel within each unit which are described in more detail in Table 3.46. There is a tremendous amount of OHV use in the NRA and a proliferation of OHV user-made trails. In an effort to protect resource values, BLM has closed areas within the Semi-Primitive Motorized Unit to summer motorized use. See Table 3.46 for specific closures.	The decision to protect and enhance important recreational values in the NRA is still valid. However, Some of the management zones may no longer be relevant to current levels of demand and desires of recreational users. Decisions concerning designation of ROS categories may be inadequate. The nature, or setting, of some areas may have changed due to increased visitation and use.
Preservation of the Beaver Creek corridor and adjacent viewshed is essential to meeting recreational goals and objectives. Beaver Creek has national significance as a recreational resource and is one of the main attractions of the NRA. River floaters enjoy solitude and magnificent scenery while fishing for arctic grayling, hiking in the White Mountains, viewing wildlife, and enjoying primitive camping experiences. Maintaining the values of the river system and corridor are essential to recreational use of the NRA. (p. 5)	Ongoing. Development within the viewshed of the river has been minimized. Six winter trails cross Beaver Creek. All were designed to retain the existing character of the landscape and to meet VRM Class II criteria. The trail crossings can be seen, but do not attract the attention of the casual observer. These are winter motorized trails that provide access to public use cabins and an avenue to access remote parts of the NRA. The original Borealis LeFevre cabin was located adjacent to Beaver Creek at the end of the Summit and Wickersham trails. In 1998 the old Borealis LeFevre Cabin was removed and rebuilt on more stable ground. The rebuilt cabin is less visible from the river than the original cabin.	Yes. Preservation of Beaver Creek corridor and adjacent viewshed remains a valid decision. Beaver Creek is designated under the WSR Act and is classified as “wild.”

Current Management Decisions	**Status**	**Is the Decision Responsive to Current Issues?**
The highlands, consisting of the high-ridge complex from Cache Mountain to Lime Peak and Mount Prindle plus the White Mountains backbone and Victoria Mountain, will be managed to protect remote primitive values. Values include outstanding scenic vistas of high mountain terrain, pristine areas with virtually no evidence of man-made improvements, wildlife viewing opportunities, high ridge hiking opportunities along unimproved trails, unique landforms and geologic features, hunting and fishing opportunities, and outstanding opportunities for winter use of remote backcountry. (p. 5)	As part of the winter cabins and trails program, a winter trail along O'Brien Creek and Fossil Creek, which essentially loops half way around Cache Mountain, was developed to connect the two sides of the winter trail program into a loop system for cabin to cabin travel. An unimproved airstrip is located near Rocky Mountain Peak (formerly known as Lime Peak). BLM has performed no maintenance or improvements at that location. The highlands described and designated as "Primitive" have been managed as described "with virtually no evidence of man-made improvements."	Generally Yes. However, management zone boundaries and ROS classes will be reviewed during the planning process, based on current information.
A remote cabin program will be developed and a system of cabins established to accommodate recreational uses, such as float boating, dog mushing, backcountry hiking, and winter uses. Along with the existing Borealis cabin, cabins will be constructed in the vicinity of Wickersham Dome, Trail creek, Fossil Creek, Windy Creek, upper Bear Creek, Lime Peak, Victoria Creek, Mount Prindle, Bear/Champion Creek, and other areas identified later. (p. 5 Recreational Facilities)	Twelve public use cabins have been constructed, including one outside the NRA. Summit and Wickersham Creek trail shelters have been constructed. The Lime Peak, Victoria Creek and Mount Prindle/Bear/Champion cabins have not been constructed. There are over 220 miles of trails in the NRA that connect the public use cabins to the highways. Cabins are generally located 10-15 miles apart. The trails are primarily used in the winter, though some are accessible in summer, by hikers and OHV's (under 1,500 pound GVWR).	Yes. The cabins and trail system is very popular and should be maintained. Future needs for recreational facility development will be considered during the planning process.

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
New recreational sites would be developed, such as, campgrounds, trailheads, parking, and float-trip staging areas, within the context of primitive and semi-primitive recreation. These sites would include a primitive campground and staging area in the vicinity of Lower Nome Creek, trailheads, and related new trails. (p. 6)	The following have been developed: Wickersham Dome and McKay Creek trailheads, Davidson Ditch wayside, U.S. Creek Road wayside, Mt. Prindle campground, Ophir Creek campground, Beaver Creek access, Nome Creek Administrative site, and Nome Creek Road. Also the Colorado Creek Trailhead and Cripple Creek campground which are located outside of the NRA.	Yes. Existing sites should be maintained and future needs for recreational facility development will be considered during the planning process.
Trails and recreational development will be located to avoid conflicts with crucial wildlife habitat and environmentally sensitive areas. Trail development would include: (1) a system of unimproved trails which would consist of limited vegetation clearing, necessary trail markers, and boardwalks to span unavoidable wet areas; (2) developed trailheads with parking, toilet facilities, signs, maps, mileage; and (3) a system of appropriately located public use shelter cabins. (p. 6)	All developed sites went through a review process to minimize and avoid crucial wildlife habitat and environmentally sensitive areas. For example, trails were not constructed within 1,000 feet of a sheep mineral lick (Quartz Creek Trail). Areas where known peregrine nesting occurs are closed to motorized after April 15th (Fossil Creek Trail, Windy Creek Trail, and Cache Mountain Loop Trail).	Yes. Avoidance of crucial habitats and reduction of conflicts with wildlife are important. Criteria for trail development may need to be revisited based on past experience with trail maintenance.
Three recreation sites and recreation withdrawals outside the NRA (listed below) will be retained under BLM management as support facilities and to serve as staging areas. (p. 6)		
The Cripple Creek campground and recreation withdrawal is a 21-unit campground, located 60 miles northeast of Fairbanks. It will serve as a major staging area for people wishing to travel into the NRA.	This site has been withdrawn and reserved as a recreation site (PLO 4176). The campground has and continues to be managed, upgraded, and maintained by BLM.	Yes. The Cripple Creek portion of PLO 4176 should be retained to protect current development.
The U.S. Creek recreation withdrawal north of the Steese Highway ROW at 56 Mile is a site that will be developed as necessary to serve as a staging area for the White Mountains NRA.	This site has been withdrawn and reserved (PLO 4176). It has been developed as a staging area and a “gateway” access for summer recreation into the White Mountains. In the winter it is used as a trailhead to access the public cabins and trail system.	Yes. The U.S. Creek portion of PLO 4176 should be retained to protect current development.

Current Management Decisions	**Status**	**Is the Decision Responsive to Current Issues?**
The Perhaps Creek recreational withdrawal at 53 Mile Steese Highway will be retained for future development.	This site has been withdrawn and reserved as a recreation site (PLO 4176) but remains undeveloped.	Possibly. The need to retain the Perhaps Creek portion of PLO 4176 will be reviewed.
Public information and interpretation would be provided through development of signs, brochures, and maps. This material would be designed to facilitate greater public enjoyment and increase the public's understanding of recreational resources. (p. 6, Visitor Use Management and Information)	Ongoing. Interpretive displays exist at many locations including trailheads and campgrounds. Several brochures were developed. A comprehensive trailhead project was undertaken in 1994. On the Steese Highway, the McKay Creek Trailhead and Cripple Creek Campground were upgraded. On the Elliott Highway, the Wickersham Dome and Colorado Creek trailheads were constructed. Additionally, the Nome Creek Road, Ophir and Mt. Prindle campgrounds were constructed.	Yes. Providing public information and interpretation increases public enjoyment of the area and assists in conservation of resources.
Special recreation use permits would be required for commercial use, competitive events, and special uses involving over 50 participants. (p. 6)	Ongoing. Special recreation use permits are issued in for these types of uses in the NRA.	Yes. These types of uses require a permit. But not a planning level decision.
Visitor use would be monitored to evaluate use patterns, needs, and impacts. (p. 6)	Ongoing. Cabin and campground fee information, trailhead log information, and cabin log information are used for monitoring. Visitor use monitoring and interaction occurs through in-the-field interaction with BLM staff. The BLM Fairbanks District Office receives and relays visitor use information. BLM takes part in the local Outdoor shows and makes presentations to local groups. BLM contracted the University of Alaska to conduct visitor use surveys.	Yes. Monitoring of visitor use will make BLM more responsive to visitor needs and desires, and will help protect resources from degradation.
Opportunities for fishing, wildlife viewing, hunting, and trapping would be ensured. (p. 6)	Ongoing. Maintenance of these opportunities is a major component of the review process that occurs for each action taken in the NRA.	Yes. These activities are important values of the NRA.
Prescriptions for the Primitive Management Unit		

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
Egress from Beaver Creek will be improved by establishing a site for a primitive airstrip as a take-out point in the vicinity of Victoria Creek. (p. 17)	An airstrip was not established because multiple natural airstrips are currently available in the vicinity of Victory Creek.	Not needed. multiple natural strips are available in this area.
Short hiking trail opportunities associated with river floating trips will be established in Fossil Creek, Windy Gap, Serpentine Slide, Big Bend, and other areas which might later be identified. Winter trails will also be established within this management unit. (p. 18)	Ongoing. A hiking route was cleared in the Fossil Creek area, and is minimally maintained. Winter trails were established including Cache Mountain Loop Trail, Fossil Creek Trail, and Windy Creek Trail.	Generally yes. Future needs for trail development will be considered during the planning process or as part of implementing the RMP.
A minimum of 160 miles of trails and six cabins will be established within this unit. (p. 18)	About 60 miles of trail has been established (Cache Mountain Loop, Fossil Creek, and Windy Creek trails). Five cabins (Caribou Bluff, Cache Mountain, Windy Gap, Borealis-Le Fevre, and Wolf Run) have been constructed.	Generally yes. Future needs for trail and cabin development will be considered during the planning process.
Prescriptions for the Semi-Primitive Motorized Management unit		
Within the Semi-Primitive Motorized Management unit, values which should be protected include ORV access related to hunting opportunities, scenic recreational access to primitive areas and river put-ins, wildlife viewing, hiking opportunities in the vicinity of the White Mountains Trail and Mount Prindle, and recreational mining on Nome Creek (p. 5)	Ongoing. Three motorized access hunting trails have been identified and sustainable trail construction techniques implemented: Quartz Creek (18 miles), McKay Creek (5 miles), and Wickersham Creek (7.5 miles) trails. Development in Nome Creek valley provides easily accessible recreation opportunities including: Table Top Mountain Loop Trail (non- motorized), Two Step Louis Interpretive Trail (ADA accessible), Quartz Creek Trail, Beaver Creek put-in, access along the tailings, and two campgrounds. The White Mountains Trail (Summit Trail) provides access at Beaver Creek. A cabin shelter was constructed as a component of the trail. Summit Trail was closed to motorized use (FR July 15, 1988).	Generally yes. However, management zone boundaries and ROS classes will be reviewed for the entire NRA during the planning process, based on current information and increasing use of the area.

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
	The Mount Prindle area was surveyed for development of a hiking trail system. BLM concluded that "route finding" would be sufficient. Since the development of Nome Creek road and Prindle campground, there is renewed interest in a trail to Mount Prindle. The current route has experienced increasing foot traffic and is deteriorating. Construction of stepping stones or a ford across Nome Creek, and a sustainable trail to the headwaters of Nome Creek is needed to distribute use out of the campground.	
Recreation facilities development will include: Trailheads and parking areas for trails leading into primitive areas. (p. 22)	Ongoing. Wickersham Dome, Colorado Creek, McKay Creek, and Quartz Creek trailheads and parking areas have been constructed.	Generally yes. Future needs for facility development will be considered during the planning process.
Recreation facilities development: Development of snowmachine trails and public use cabins in the Wickersham Dome area. (p. 22)	Ongoing. Wickersham Dome Trailhead was constructed. Wickersham Creek, Moose Creek, and Trail Creek trails are maintained for snowmachine and other winter uses. Lee's Cabin, Summit Trail Shelter, Wickersham Trail Shelter, Eleazar's Cabin, and Moose Creek Cabin have been constructed.	Generally yes. Future needs for facility development will be considered during the planning process.
Existing access will be improved, and new winter trails will be established in Upper Victoria Creek/Colorado Creek, White Mountains Trail, Trail Creek/O'Brien Creek, Bear Creek/Quartz Creek, and in other areas identified later. (p. 22)	Ongoing. Lower Nome Creek, Bear Creek, McKay Creek, Cache Mountain Loop, Windy Creek, Fossil Creek, Fossil Gap, Colorado Creek, Wickersham Creek, Moose Creek, and Trail Creek trails have been constructed and improved and are maintained for winter recreational use.	Generally yes. Future needs for facility development will be considered during the planning process.

Current Management Decisions	Status	Is the Decision Responsive to Current Issues?
Trailhead access for the interior highlands will be provided at lower Nome Creek and for the Mt. Prindle area at upper Nome Creek near the terminus of upper Nome Creek/U.S. Creek Road. (p. 22)	Ongoing. Quartz Creek Trail, trailhead and parking area have been constructed.	Generally yes. Future needs for facility development will be considered during the planning process.
Access to Beaver Creek will be improved by establishing a two-wheel drive road to a put-in point in the vicinity of lower Nome Creek Road or reasonable alternative location. (p. 22)	Ongoing. Nome Creek Road, Beaver Creek put-in site, and Ophir Creek Campground have been constructed.	Generally yes. Future needs for facility development or upgrades will be considered during the planning process.
Areas for expansion of hiking and cross-country skiing opportunities in the Wickersham Dome Area will be evaluated and identified. (p. 22)	Ongoing. Summit Hiking Trail, Ski Loop Trail, trailhead, and parking area, Summit Trail Shelter, Eleazar's Cabin, Wickersham Creek Trail Shelter, and Lee's Cabin have been constructed.	Generally yes. Future needs for trail development will be considered during the planning process.
A minimum of 70 miles of trails and two cabins are proposed within this unit. (p. 22)	Ongoing. Numerous trails, five cabins, and two trail shelters have been constructed in this unit.	Generally yes. Future needs for trail and cabin development will be considered during planning.
White Mountains Recreation Area Management Plan (BLM 1988)		
Construct the improvements specified in the Nome Creek Road design study. (RAMP p. 15)	Nome Creek Road, Beaver Creek put-in site, Ophir Creek and Mt. Prindle campgrounds have been constructed.	The White Mountains RAMP will be revised after completion of the RMP.

3.3.4.12. Travel Management White Mountains

Existing travel management decisions from the White Mountains RMP (BLM 1986b) and Beaver Creek River Management Plan are listed in Table 3.47. The management objectives for Travel Management from the White Mountains are RMP are:

- Improve access for recreational use of Beaver Creek within the confines and purpose of the Wild and Scenic River Act and approved river management plan.
- Improve recreational access to the interior highlands emphasizing primitive and semi-primitive experiences.
- Maintain natural ecosystems in order to enhance primitive and semi-primitive recreational experience.
- Provide for semi-primitive motorized recreation on the lands along the southern and western boundaries of the White Mountains NRA.
- Provide opportunities for off-road vehicle use where compatible with recreation objectives.

- Where compatible with recreation goals, permit multiple-use of resources on land classified as semi-primitive.

As discussed in section 4.2.5, Travel Management, BLM planning guidance and policy for travel management has changed substantially. All travel management decisions will be revised to meet current guidance and to resolve management issues that have arisen in the past twenty years.

Table 3.46. Current travel management for the White Mountains NRA and Beaver Creek

Current Management Decisions	Status	Is Decision responsive to current issues?
Source: White Mountains ROD/RMP (BLM 1986b)		
Prescriptions Common to All Management Units		
The type and extent of ORV uses allowed under the plan depends on the designation of the unit in which the use occurs. The Primitive Unit is closed to all ORV use, with the exception of winter snowmachine use. The Semi-Primitive Motorized Unit is open to the use of off-road vehicles of less than 1,500 pounds GVW. Vehicles of greater than 1,500 pounds GVW could only be allowed through a specific request to the Authorized Officer [and with specific stipulations laid out in the White Mountains ROD/RMP]. Research Natural Areas are closed to all ORV use. (p. 12, Off-Road Vehicles)	Ongoing. BLM currently manages off-highway vehicles in the NRA using these standards. Information is available to users, via the Fairbanks District Office, at trailheads, on the internet, and through a off-highway vehicle brochure.	Partially. Many aspects work. The RMP did not foresee the rapid and significant increase in OHV use and proliferation of user-created routes. The extent and type of OHV use allowed will be reexamined.
An ORV monitoring program would be developed and implemented to document existing trails and their conditions, 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. (p. 12)	Ongoing. A comprehensive trail inventory was completed in 2005.	Yes. This is valid existing management.

Current Management Decisions	Status	Is Decision responsive to current issues?
On an interim basis, a semi-primitive area open to ORV use would be closed or restricted under any of the following conditions: 1) A watershed would be closed to ORV use when, due to erosion and sedimentation or poor trail conditions, more than five percent of the miles of trail become difficult to negotiate with a small three-wheeler or other like sized ORV; 2) A watershed would be closed to ORV use when water pollution from ORV 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 will be closed to ORV use from the beginning of breakup to the time when willows and dwarf birch are in full leaf; and 4) ORV use would be restricted or prohibited as necessary to protect recreation, wildlife, watershed and/or scenic values. (p. 12)	Ongoing. BLM has implemented closures in the Semi-primitive motorized unit based on these criteria. The Wickersham Creek Trail summer seasonal trail closure resulted from extensive trail damage from OHVs.	Generally yes. In motorized areas, criteria for interim closures is appropriate. The extent and type of OHV use allowed within various units will be reexamined during planning.
Permanent use restrictions on off-road vehicles would require an order, signed by the Authorized Officer (AO) and published to the Federal Register. Signs would be posted at access points to inform the public of use restrictions. However, where the AO determines that ORVs are causing or will cause considerable adverse effects on resource values or other authorized uses, he/she shall immediately close the area or trail affected to the type of vehicle causing the adverse effect until that effect is eliminated and measures have been implemented to prevent a recurrence. (p. 13)	Ongoing. The Highlands area and Beaver Creek corridor are closed to OHVs and snowmachines weighing more than 1500 pounds GVWR. The Ski Loop Trail is closed to all motorized vehicle use. The Summit Trail is closed to motorized use (except for snowmobiles weighing less than 1500 pounds GVWR and crossing the trail at right angles to access state or Federal lands open to OHV use). RNAs are closed to all OHV use.	Generally yes. The extent and type of OHV use allowed within various units will be reexamined during the planning process.
Source: FR: 09/15/1997 (Vol. 62, No. 178)		
Launching boats with motors exceeding 15 horsepower without written authorization from BLM's Northern District Manager is prohibited in the Nome Creek valley. Using hovercraft or airboats is prohibited.	Ongoing. BLM currently manages use of motorized boats to this standard.	Yes.

Current Management Decisions	**Status**	**Is Decision responsive to current issues?**
Prescription for Primitive Management Unit		
Egress from Beaver Creek will be improved by establishing a site for a primitive airstrip as a take-out point in the vicinity of Victoria Creek. (p. 17)	A determination was made that multiple natural airstrips are available in the vicinity of Victoria Creek.	No.
Short hiking trail opportunities associated with river floating trips will be established in Fossil Creek, Windy Gap, Serpentine Slide, Big Bend, and in other areas. Winter trails will also be established within this management unit. (p. 18)	Hiking route was cleared and is minimally maintained in Fossil Creek area. Winter Trails include Cache Mountain Loop, Big Bend, Fossil Creek, Fossil Gap, and Windy Creek trails.	Generally yes. Future trail development will be considered during planning.
A minimum of 160 miles of trails and six cabins will be established within this unit. (p. 18)	Approximately 60 miles of trail has been established. Five cabins have been constructed. (See Table 3.46)	Generally yes. Future facility development will be considered during planning.
The Primitive Management Unit is closed to ORV use. The single exception is the seasonal opening of the unit to the use of snowmachines. Authorization will be required for the use of any motorized vehicle other than a snowmachine off a valid ROW. Aircraft use will generally be unrestricted. (p. 19)	BLM currently manages off-highway vehicles using these standards. The extent and location of primitive areas will be reexamined during the planning process.	Generally yes.
Prescription for Semi-Primitive Motorized Management Unit		
The use of vehicles of less than 1,500 pounds GVW will be unrestricted in any season, except on designated hiking trails and cross-country ski trails, which would be closed to all vehicles. This policy will be reviewed after five years. The review will take into consideration the results of ORV monitoring. The use of vehicles of more than 1,500 pounds GVW off a valid ROW will require authorization. (p. 25)	Ongoing. BLM has closed areas within the Semi-Primitive Motorized unit to summer motorized use. Closures include: the block of land located between the Nome Creek Road, the Bear Creek Trail and Beaver Creek river corridor, the east side of the Quartz Creek Trail and the block of land from and including portions of the Wickersham Creek Trail to the Summit Trail/NW NRA boundary to Beaver Creek river corridor.	The extent and type of OHV use allowed within various units will be reexamined during the planning process. Other restrictions besides a weight limit may be more effective.
Prescription for Beaver Creek National Wild River Corridor		

Current Management Decisions	Status	Is Decision responsive to current issues?
Except as listed below, ORV use is prohibited within the Beaver Creek Wild River corridor. During the winter months, snowmachines of less than 1,500 pounds GVW are permitted. ORV use for access to in-holdings can be authorized under a mining plan of operation (43 CFR 3809), with a ROW permit (43 CFR 2800 or 43 CFR 2920), or by other appropriate means. (p. 21)	Ongoing. This decision amended the Beaver Creek River Management Plan which allowed for some use of off-highway vehicles in the corridor.	Yes. Restrictions on motorized is appropriate in a wild river corridor. The extent and type of motorized use allowed will be reexamined.
Source: Beaver Creek River Management Plan (BLM 1983c)		
Action 1.1: Overland transportation systems within or across the river corridor may be authorized if it is determined that there are no economically feasible and prudent alternative routes (ANILCA Section 1105). (p. 29)	BLM currently manages the Beaver Creek corridor to this standard.	Yes. Authorized by ANILCA.
Action 1.3: On BLM administered areas, use of OHVs weighing less than 1,500 pounds GVW is authorized without a permit. Use of vehicles weighing more than 1,500 pound GVW is prohibited without authorization or approved plan of operations. On FWS administered areas, off-road vehicle use, other than snowmobiles, is prohibited without a permit or approved plan of operations. (p. 29)	This direction was amended by the White Mountains RMP as discussed above under "Prescriptions for Beaver Creek National Wild River Corridor."	No. Amended by the White Mountains RMP.
Action 1.4: A program will be established to monitor the effect of vehicle use within the river corridor boundary. (p. 29)	This direction was amended by the White Mountains RMP: “ORV use is prohibited in the Beaver Creek Wild River corridor” as outlined above.	No. Amended by White Mountains RMP.
Action 1.5: The land manager will work cooperatively with the State of Alaska to identify all rights-of-way pursuant to R.S. 2477 within the river boundaries for administrative purposes.	No R.S. 2477 assertions have been formally brought forth to the BLM. These rights-of-way will be addressed through the courts.	No. Outside the scope of the RMP.

Current Management Decisions	Status	Is Decision responsive to current issues?
Action 1.6: Use of motorized boats is permitted without specific authorization. (p. 29)	Ongoing. Motors larger than 15 horsepower are not allowed to launch in the Nome Creek Valley.	The extent and type of motorized use allowed will be reexamined.
Action 2.1: Construction of new public [aircraft] landing strips within the river corridor may be allowed if there is an identified and significant public need.	No public landing strips have been constructed. There are multiple natural landing strips available throughout the corridor.	No
Action 2.2: On BLM administered areas, landing of fixed wing or rotary aircraft is permitted without specific authorization. (p. 29)	BLM currently manages use of aircraft in the Beaver Creek corridor to these standards.	Generally yes. The use of aircraft within the corridor will be reexamined during planning.

3.3.4.13. Lands and Realty White Mountains

The White Mountains RMP (BLM 1986) provides management direction for the lands and realty program. Existing decisions and their status is outlined in Table 3.47. Generally, applications for lands and realty uses are reviewed and authorized if consistent with management of the NRA.

Table 3.47. White Mountains NRA: Current Management Realty Actions for the White Mountains NRA (Source: White Mountains RMP (BLM 1986a)

Current Management Decision	Status	Is Decision responsive to Current Issues?
Two transportation corridors were established. One crosses upper Nome Creek from 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, to provide access to a put-in point on Nome Creek. Development within this second corridor will require a ROW from the State. Both corridors generally follow existing roads or trails. The upper Nome Creek corridor will provide recreational access to the ridge complex leading to the Mount Prindle area and the highland country. Both corridors could be used to provide access to existing and possible future mineral development. (p. 14)	The transportation corridors may not be in the most appropriate location. The Nome Creek Road has since been developed (outside the corridor) and provides access to a put-in point on Nome Creek - replacing the need for the second corridor.	No. Corridors will be reviewed, and revised or eliminated if appropriate. The need for additional corridors will be considered.

Current Management Decision	Status	Is Decision responsive to Current Issues?
To prevent a proliferation of rights-of-way (ROW), all future ROW will, as far as possible, be located within one of these two corridors. If it becomes necessary for a ROW to extend beyond a corridor, existing trails will be followed whenever possible. Several users might be required to use the same ROW 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. (p.14)	This decision remains valid, but the corridors have not been used for ROW.	Yes. If transportation corridors are designated.
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. (p.15)	No roads have been constructed. So this decision has not been implemented.	Yes. Engineering studies for route selections should be conducted.
No lands within the NRA will be exchanged or otherwise disposed of. (p.15)	No disposals have occurred.	Yes.
Lands outside the NRA in the Wickersham Dome area will be retained in Federal ownership for recreational purposes. (p.15)	Ongoing. These lands currently withdrawn by PLO 5150. The State has selected these lands for conveyance.	Yes. These lands are important for recreational access and facilities associated with the NRA.
Other realty actions compatible with the land uses could be permitted if compatible with land uses designated in this plan. The BLM is in the process of formulating a trapping cabin policy. (p.15)	Ongoing	Yes.
Rights-of-way will be allowed within the Primitive Management Unit only if there is no economically feasible and prudent alternative. (p.20)	Ongoing. There has been little demand for ROW.	Yes.
In order to open lands to mineral leasing, a Public Land Order (PLO) will be needed to revoke the existing withdrawals. (p.29)	The decision to open lands to leasing has not been implemented.	Yes. If a decision is made to open lands to leasing, then a PLO will be needed.
Lands in the Wickersham Dome area are presently withdrawn from State selection under PLO 5150. Should PLO 5150 be revoked, another PLO will be necessary to ensure that the Wickersham Dome area will be retained in Federal ownership and reserved for recreational purposes. (p. 29)	This decision has not been implemented. PLO 5150 is still in effect.	No. If the decision is to retain these lands, then PLO 5150 will be retained.

Current Management Decision	Status	Is Decision responsive to Current Issues?
BLM will have to process applications for ROW for pipelines, roads, or trails which may be proposed for access to mineral claims or leases, for public recreation, or other purposes. The BLM will also have to file ROW applications for trails, cabins, and other facilities constructed at the expense of the BLM, to ensure that these facilities are protected from adverse land actions. (p.29)	This decision remains valid and is being implemented, but demand for ROW has been low. BLM has reserved ROW for some BLM facilities.	Yes.
The BLM will work cooperatively with the State to identify all ROW claims made pursuant to R.S. 2477 within the NRA boundaries for administrative purposes only. The validity of such claims can only be determined in a court of competent jurisdiction. (p.29)	No R.S. 2477 assertions have been formally brought forth. These ROW will be addressed through the courts.	No. Outside scope of the RMP.
The BLM will cooperate with the state and other Federal agencies in the preparation of an analysis of transportation needs involving the respective State and Federal transportation and land managing agencies. The analysis would address the existing and future access needs and propose how best these needs could be met. It would also identify where access routes presently exist and which ones, if any, are duplicative. (p.29)	This decision has not been implemented.	Yes. This will be addressed in the travel management section of the RMP.

3.3.4.14. Research Natural Areas White Mountains

The White Mountains RMP (BLM 1986b) designates and provides management direction for three RNAs: Mount Prindle, Limestone Jags, and Serpentine Slide. The Mount Prindle RNA is split between the White Mountains and the Steese subunits.

Table 3.48. Current Management for RNAs in the White Mountains NRA

Current Management Decision	Status	Is Decision responsive to Current Issues?
No surface disturbing activities will be allowed within the RNAs except permitted research projects.	Ongoing	Yes. It may conflict with a decision allowing development of trails (a form of surface disturbance). This decision should be reviewed.
The areas will be closed to off-road vehicles and camping to avoid disturbing research projects.	Ongoing	Yes

Current Management Decision	Status	Is Decision responsive to Current Issues?
Primitive campsites could be established outside the RNA boundaries and improved access in the form of trails could be developed. Hiking, hunting, and natural appreciation will be allowed.	Ongoing	Generally yes. The decision to prohibit primitive camping should be reevaluated.
An Establishment Report, which describes the values within an RNA and outlines visitor management controls, will be written for each RNA.	Completed	No longer applicable.
Natural processes, including wildfire, will be allowed to continue with as little interference as possible.	Ongoing	Yes. Decision on wildfire may need to be reevaluated based on climate change.
All RNAs will remain closed to all types of mineral leasing.	RNAs are closed	Yes. Mineral development is not consistent with maintaining RNA values.

Chapter 4. Management Opportunities

4.1. Resources

4.1.1. How to Read this Chapter

This chapter discusses opportunities to change or improve management in the planning area during the planning process, based on the analysis of existing management decisions in Chapter 3. It is broken down by resource or management program.

4.1.2. Air Resources

Since air resources are only minimally addressed in the existing RMPs through the Fire Plan Amendment (BLM 2005), there is an opportunity to identify desired outcomes for air quality. Additionally, the RMP may identify required operating procedures that apply to BLM-authorized activities that result in emissions or other impacts to air quality.

4.1.3. Soil Resources

Soil resources are only minimally addressed in the Fortymile MFP, Steese RMP and White Mountains RMP. Current decisions do not meet the BLM's planning guidelines. There is an opportunity to identify desired outcomes for soil resources through this planning process. Additionally, the RMP may identify required operating procedures that apply to BLM-authorized activities that have the potential to impact soils through increased erosion, thermokarsting, or compaction. Watersheds or specific soils that need protection may also be identified in the plan.

Within the planning area, major programs that can generate soil degradation (compaction, erosion) are increased OHV use, road construction, mineral material disposal, hydrocarbon exploration and development, and placer mining. Opportunities exist for BLM to partner with other agencies and cooperatively support inventory of soil resources in the planning area. Conducting appropriate soil surveys would help identify soils with high erosion characteristic to avoid in planned developments.

4.1.4. Water Resources

Current decisions in the Fortymile MFP, Steese RMP and White Mountains RMP may not meet the BLM's planning guidelines. In the Black River subunit, where there are no decisions, the planning process provides an opportunity to develop formal management guidance for water resource management in the upper Black River and tributaries. There is an opportunity to identify desired outcomes for water resources and specific watersheds that may need special protection throughout the planning area. Additionally, opportunities exist for BLM to partner with other agencies in monitoring of water quality and changes related to climate change. The RMP also provides an opportunity to develop standard required operating procedures that would apply to BLM permitted activities and would be aimed at protecting water quality. The RMP may identify measures to ensure water availability for multiple use management, including filing for water rights.

The Steese RMP identified the need to improve water quality in Birch Creek National Wild River by reclamation of ground disturbed by mining. It also identified the need to maintain a sufficient instream flow to meet the purpose for which the river was established. Both of these remain valid

decisions. Substantial opportunity exists for additional reclamation of abandoned placer-mine tailings in the Birch Creek watershed. There is an opportunity to use existing water quality monitoring data from Birch Creek to help develop standard required operating procedures for mining plans of operation that are adequate to protect water quality. There may be a need to file for water rights on other streams in the Steese NCA.

The White Mountains RMP identified the need to protect water quality in Beaver Creek National Wild River. Protection of water quality is necessary to provide a quality recreational experience. The Beaver Creek system currently meets State water quality standards. However, the water quality program should be expanded to include Victoria Creek (tributary to Beaver Creek), prior to development of proposed oil and gas transportation corridors. BLM has obtained instream flow water rights for Birch Creek. The RMP may identify other streams, such as Nome Creek, for application of water rights.

4.1.5. Vegetative Communities

Only the Birch Creek and Beaver Creek river management plans have decisions specific to vegetative communities, although maintaining fire-adapted ecosystems and maintaining wildlife habitats are included in Fortymile MFP, Steese RMP, and White Mountains RMP. The current decisions do not meet BLM's planning guidance (BLM 2005). The planning process provides an opportunity to develop decisions specific to management of vegetative communities in all planning subunits. Desired outcomes for vegetative resources will be identified. Priority plant species and habitats may be identified. Actions or use restrictions needed to achieve desired vegetative conditions will be identified. It also provides the opportunity to develop standard required operating procedures aimed at protecting the vegetative resource.

4.1.6. Noxious and Invasive Plants

None of the current land use plans include specific direction for the management of nonnative invasive species (NIS). Management decisions for NIS, including plants, pathogens, and animal pests, will be developed for the first time in the Eastern Interior RMPs. Decisions specific to the management of non-native, invasive plants and NIS will be developed to respond to current issues and to be in compliance with the BLM Planning Handbook (BLM 2005). The planning process provides an opportunity to develop standard required operating procedures that would apply to BLM permitted activities and would be aimed at preventing the establishment and spread of these species.

4.1.7. Fish

Given the condition and trends of fisheries resources in the planning area, current management direction is generally able to achieve desired fish population and habitat conditions. However, some adjustment to BLM's fisheries management actions would benefit fish resources. There is an opportunity to designate areas of critical environmental concern (ACEC) for important fish habitat areas. Actions or use restrictions needed to achieve desired habitat conditions will be identified. It also provides the opportunity to develop standard required operating procedures aimed at protecting the fishery resource.

The new RMP/EIS should also address how the BLM will prioritize watersheds for fisheries inventories, conservation, or restoration. For all planning area subunits, there is a need to

document anadromous fish use of habitat in drainages of BLM-managed lands. By documenting these habitats, BLM can recommend additions to the State's Anadromous Waters Catalog and thereby ensure that anadromous streams in the planning area are protected.

Areas of relative ecological importance

Black River

One area of relative ecological importance in the Black River area is the Salmon Fork Black River (Map 2.2). This river provides important spawning grounds for fall chum salmon, and possibly for Chinook salmon. Barton (1984) provided a compilation of salmon escapement survey data in the Yukon River drainage. Rost (1986) reported results of summer and fall aerial surveys in 1985. This data, although limited, suggests that the Salmon Fork Black River has the most significance for BLM fisheries management. Important fall chum spawning grounds are present in Kevinjik Creek, which flows into the Salmon Fork, but this habitat is part of the Yukon Flats National Wildlife Refuge.

Table 4.1. Fall chum salmon aerial escapement estimates by year (Sources: Barton 1984; Rost 1986).

Water body	1974	1975	1976	1985
Black River		50		200
Salmon Fork	444	1517	0*	791
Kevinjik Creek	1625	582	7*	300
Tetthajik Creek				4
Grayling Fork				80

* Poor or incomplete survey; minimal or rough estimate.

White Mountains NRA

Other areas of relative ecological importance for fisheries resources are in Nome Creek and Beaver Creek in the White Mountains. Nome Creek historically provided important Arctic grayling habitat, particularly summer feeding and spawning habitat. Extensive mining from the early 1900s to the late 1980s disturbed approximately 8 miles of stream bed and associated floodplain. Arctic grayling is the most popular species targeted by recreational fishers in the

Beaver Creek drainage (Collin and Kostohrys 1998). The ecological importance of Nome Creek lies in its potential to provide Arctic grayling feeding and spawning habitat and its ease of access and high level of recreational use.

BLM has carried out extensive riparian reclamation and stream channel reconstruction in Nome Creek. Continued monitoring of the relative success of the reclamation effort would provide valuable information about Arctic grayling habitat preferences and appropriate mining reclamation and habitat restoration techniques.

4.1.8. Wildlife

Given the condition and trends of wildlife resources in the planning area, current management direction is generally able to achieve desired population and habitat conditions. However, conditions have changed since the original RMPs were written and new decisions made in the RMPs have the potential to affect wildlife. Some adjustment to BLM's management actions would benefit wildlife resources. The planning process provides an opportunity to review and revise priority species and crucial habitats, and to review and revise restrictions on other activities. Areas of critical environmental concern to protect important habitats may be considered for designation. There is an opportunity to develop standard required operating procedures that would be aimed at protecting wildlife populations and habitats. Domestic animals on Dall sheep range can cause disease transmission risk. The planning process provides an opportunity to add restrictions against domestic sheep and goats in Dall sheep habitat (including pack goats) due to disease risk.

In some planning subunits, changes in fire management options have resulted in a greater prevalence of fire on landscape. With a more natural fire regime on landscape and potential changes due to climate change, fire management goals may need to be refined. The planning process provides an opportunity to develop fire management goals for wildlife and evaluate the need for prescribed fire on selected sites. Impacts of fire to caribou wintering habitat are of concern. BLM should continue investigations in cooperation with other agencies to help determine at what point increased fires impact Fortymile caribou and when are changes in management to protect lichen habitats warranted.

In the Steese subunit, there is an opportunity to develop more specific and/or additional required operating procedures to maintain suitability for caribou use. Important caribou habitats may be considered for ACEC designation. Revisions to recreation management and OHV designations may be considered in both the Steese and White Mountains subunits and be designed to provide additional protection of caribou and Dall sheep habitats.

In the Fortymile Subunit, land ownership has changed substantially since development of the Fortymile MFP. The planning process provides an opportunity to revise priority species lists, important habitat areas, and restrictions on other uses to reflect the lands that BLM currently manages. BLM should identify important wildlife habitats and evaluate these areas for potential ACEC designation and development of habitat management plans. Several identified mineral licks are known on BLM lands. These are considered crucial habitats and should be protected. ACEC designation for Glacier Mountain/Mount Eldridge, Mt. Harper, and upper Granite Creek (Upper Slate Cr. /Arctic Dome) Dall sheep habitats should be considered.

4.1.9. Special Status Species

The Beaver Creek Chinook salmon was identified as a BLM sensitive species in 2004 and it is not addressed by the current RMPs. The only special status wildlife species addressed by the current land use plans is the American peregrine falcon. Although it was listed at the time the current plans were developed, it has since been delisted. Although several plants are currently listed as BLM sensitive species, the BLM-Alaska sensitive species list is currently under review based on revisions to the BLM's Special Status Species Manual. It is not clear at this time which species will be on the revised list.

This planning process provides an opportunity to develop management decisions related all special status species occurring on BLM-managed lands. Such as identifying desired outcomes, restoration opportunities, use restrictions and management actions to conserve special status species. There is an opportunity to develop standard required operating procedures and restrictions on other resource uses aimed at protecting special status species. Areas of known and likely habitats will be identified for special consideration when authorizing uses of BLM lands.

4.1.10. Wildland Fire Ecology and Management

The current land use plans were amended by the Statewide Fire Plan Amendment (BLM 2005) in 2005, so fire management decisions are relatively up to date compared to some other programs. As discussed in section 4.1.8 Wildlife, there is an opportunity to develop fire management goals for wildlife and evaluate the need for prescribed fire. Additionally, the following items may be considered.

- Use appropriate management response to wildland fires to meet resource objectives.
- Use prescribed fire to meet resource objectives where needed
- Identify areas where biomass may be utilized by rural communities.

4.1.11. Cultural Resources

The planning process provides an opportunity to update the existing plans to meet the requirements of the BLM's Planning Handbook H-1601-1 (BLM 2005) for cultural resource management. The planning handbook requires allocation of cultural properties in the planning area, to the following use categories according to their nature and relative preservation value: scientific use, conservation for future use, traditional use, public use, experimental use, or discharged from management. Although the Fortymile MFP addressed some of these allocations the other RMPs did not. Additionally, the language in the Fortymile MFP needs to be updated to conform to the use categories in the BLM Manual and Handbook. Fort Egbert in the Fortymile Subunit is designated for public use. More sites should be added to reflect current management of Fortymile Wild and Scenic River historic and cultural designations.

The planning process also presents an opportunity to identify special cultural resource restrictions that may affect the location, timing, or method of development or use of other resources in the planning area. Also to identify measures to pro-actively manage, protect, and use cultural resources.

Decisions in the Fortymile MFP require that interpretive information be placed at river access points outlining the nonrenewable nature of cultural resources and asking for cooperation in their maintenance. Brochures and other off-site interpretation will be developed to encourage

appreciation and respect for historic and archaeological resources. The planning process is an opportunity to revise priorities for interpretation and environmental education relative to cultural resources throughout the planning area.

The Fortymile River Management Plan includes a decision that BLM will not maintain cabins in the river corridor. This action includes historic cabins. This decision is no longer responsive to current issues and contradicts the management objective for the Fortymile River which is to assure preservation of historic values. This decision needs to be reevaluated and the Fortymile River Management Plan may need to be amended.

4.1.12. Paleontological Resources

The planning process provides an opportunity to update the existing plans to meet the requirements of the BLM's Planning Handbook H-1601-1 (BLM 2005) for paleontological resource management. The White Mountains and Steese RMPs address paleontological resources only to the extent of requiring Class III cultural inventories before allowing surface disturbing activities. The Planning Handbook (BLM 2005) requires that land use plans identify criteria or use restrictions to ensure that (a) areas containing, or that are likely to contain, vertebrate or noteworthy occurrences of invertebrate or plant fossils are identified and evaluated prior to authorizing surface-disturbing activities; (b) management recommendations are developed to promote the scientific, educational, and recreational uses of fossils; and (c) threats to paleontological resources are identified and mitigated as appropriate. This planning process provides an opportunity to address these requirements in all planning subunits.

4.1.13. Visual Resources

The Steese and White Mountains RMPs assigned visual resource management classes to these areas. VRM management classes have not been assigned in the Fortymile subunit, other than in the Fortymile River corridor which is managed as VRM Class I. BLM has never assigned VRM classes to the Black River area. This planning process provides and opportunity to assign VRM classes to the Fortymile and Black River subunits, and to update VRM management classes in the Steese and White Mountains subunits, as required in the Planning Handbook (BLM 2005).

4.1.14. Wilderness Characteristics

None of the existing land use plans address wilderness characteristics. This planning process provides an opportunity to identify those lands within the planning area which contain wilderness characteristics as required by the Planning Handbook (BLM 2005). As part of the planning process, the Eastern Interior FO will identify lands within each of the four subunits that contain wilderness characteristics. In the draft RMP/EIS, the impacts of managing identified areas to preserve wilderness characteristics will be analyzed in at least one alternative. The RMP may make decisions to protect or preserve wilderness characteristics in some areas. If the decision is to manage for wilderness characteristics, the plans will include goals and objectives to protect the resource and management actions necessary to achieve those ends.

4.1.15. Cave and Karst Resources

The existing RMPs have no decisions pertaining specifically to cave and karst resources. The Planning Handbook (BLM 2005) requires BLM to consider whether or not administrative designations (e.g., ACEC) are needed to provide protection for significant cave resources. Outcome-based management objectives and setting prescriptions to achieve those objectives should be set for each designated significant cave. The planning process provides an opportunity to develop management objectives and prescriptions for the six significant caves in the planning area.

The caves in the Upper Black River subunit are very remote and difficult to access. Significant caves within the White Mountains NRA are under the protective status provided by the Limestone Jags RNA, thus no additional administrative designations for caves are anticipated.

4.2. Resources Uses

4.2.1. Forestry and Woodland Products

The existing land use plans provide general management direction for use of forest and woodland products. This planning process provides an opportunity to review existing decisions and update them as needed. Additionally, for those areas with no land use plan in place, such as the Black River Subunit, there is an opportunity to develop guidelines for the use of forest products as required by the Planning Handbook (BLM 2005). The Planning Handbook requires that land use plans identify areas that are available and have the capacity for planned, sustained-yield timber harvest or special forest product harvest. There is also an opportunity to develop standard required operating procedures that would apply to permits issued for the use of forest products. In the Steese and White Mountains subunits, additional guidance may be needed for the wild river corridors to ensure that management of forest products is compatible with the WSR Act.

The Fortymile MFP identified some firewood harvest areas. Since that time, BLM has conveyed large amounts of land in the Fortymile subunit to the State and Native corporations, including the identified firewood harvest areas. The planning process provides an opportunity to redefine areas suitable for forest products harvest given current land ownership patterns.

4.2.2. Livestock Grazing

Other than in the Fortymile Subunit, there is no current management direction for grazing. This is appropriate as grazing is not compatible with the goals and objectives for the Steese NCA and the White Mountains NRA. The Upper Black River Subunit is not suitable for livestock grazing due to its extremely remote location, lack of access, and importance for subsistence, wildlife, and fisheries. Decisions in the Fortymile MFP are no longer responsive to current issues. These decisions need to be revised to reflect the lack of demand, lack of suitable grazing lands, and the higher priority to manage lands for wildlife and subsistence. This planning process is an opportunity to identify grazing in the Fortymile as an alternative considered but dropped from further analysis.

4.2.3. Minerals

The current management for leasable and locatable minerals is not responsive to current issues. Other than on valid existing mining claims, the entire planning are is withdrawn from both leasing and locatable mineral entry. While it is appropriate for some areas to be closed, there are lands where mining could be allowed. There are lands that have moderate to high mineral potential and where there is interest from industry. The existing closures were put into place in the early 1970s for the purposes of land selection and to allow BLM to classify the lands. Selection is now complete and lands have been classified. Thus the reason for the existing withdrawals no longer exists. The planning process provides an opportunity to allocate which lands will be open to mineral entry or leasing and to develop required operating procedures and oil and gas leasing stipulations that will reduce impacts to natural resources from mining as required by the Planning Handbook (BLM 2005).

Current allocations for salable minerals (mineral materials) may be adequate. Much of the land in the planning area is currently open for mineral material sales. Additionally, there is limited demand for mineral materials (sand and gravel) on BLM-managed lands. Regardless, the plan provides an opportunity to review the need for mineral material sites, allocation of lands for this type of use, and the development of standard required operating procedures that would apply to mineral material sales.

4.2.4. Recreation and Visitor Services

4.2.4.1. BLM National Recreation Program: A Paradigm Shift

Recreation was recognized as a major BLM program under the FLPMA. In 1989, the Recreation 2000 Strategy increased BLM's corporate commitment to recreation and generated numerous national agency programs, facilities, and initiatives. The national initiatives were publicly popular, garnered new funding, developed new facilities, and expanded BLM's ability and infrastructure to more effectively manage growing recreation demand. However, this led to a broad program focus that was not sustainable in the long-term and, on occasion, emphasized short-term development opportunities over long-term benefits. In short, BLM was trying to be all things to all people and was often managing recreation settings by pursuing random opportunities as they arose.

In 1995, the Recreation 2000 Update was published. This niche-based strategy allowed field offices to manage recreation using a bottom-up approach to program development to fit local resource settings and customer needs. Further, it encouraged field offices to implement only those national initiatives that matched their resource capability.

Despite this niche-based policy shift, the continued activity-specific and facility-centered emphasis became the end result and, at times, compromised settings and foreclosed future or long-term benefits. Individual projects, often proposed and supported by specific activity advocates and interest groups, tended to drive organizational structure, funding, planning, policy direction, and development. BLM's past approach was predisposed to overemphasizing individual projects, programs, and facilities to the detriment of the distinctive character of dispersed recreation settings and associated resulting visitor experiences and benefits to individuals, communities, economy, and the environment. It did not fully analyze or consider experiences or long-term beneficial outcomes.

BLM's constituents and respective communities have expressed concern about the changing character and loss of BLM's distinctive dispersed recreation role and open space settings. There is a growing concern about the erosion of desired recreation experiences and other quality of life benefits valued by visitors and community residents. This concern manifested itself through public input into the development of the Department of the Interior's Strategic Plan and "BLM's Priorities for Recreation and Visitor Services" Workplan (i.e. the "Purple Book").

The Unified Strategy presents a new emphasis for BLM's Recreation and Visitor Services programs by applying Benefits-Based Management (BBM) to guide the future. BBM is a framework for engaging recreation service providers as partners in managing quality recreation settings to produce desired recreation experiences and personal, social, economic, and environmental benefits. It is an outcome-based, collaborative, and business oriented approach to managing recreation.

This new emphasis represents a departure from previous recreation management methodologies by integrating the management of recreation settings with desired recreation opportunities and benefits, and does so through a cooperative delivery system of the public, local and private sectors. It is guided by the premise that BLM is not a sole source provider of recreation opportunities and that recreation planning must be considered within a regional context, regardless of ownership and jurisdiction. Individual agencies can no longer afford to manage recreation in a vacuum. BLM must seek partners and work with local communities to be successful in meeting the complex needs and growing demands of our publics and customers.

Application of the Unified Strategy, and adoption of BBM, is a shift away from implementing individual and often competing recreation activity-based projects, programs and initiatives, to a process that places recreation management actions in a hierarchy of management objectives that relate to one another. This new approach can enhance and support BLM in conserving public land recreation settings and nearby community settings; improve the quality of life for people and communities; encourage diverse and vibrant local economies; and sustain a healthy, resilient, and productive environment.

4.2.4.1.1. Recreation Program Vision

PEOPLE: By using a customer driven approach, BLM can identify visitor and community resident desires for highly valued recreation experiences and quality of life beneficial outcomes. Emphasis can be placed on defining a wide range of accessible and highly desirable recreation outcomes accomplished through management, planning, monitoring, and marketing with our managing partners and service delivery providers.

PLACES: By improving its capability to identify and prescribe the more highly valued and distinctive recreation resource conditions and outdoor and community settings, BLM can work together with partners to provide opportunities for people and communities to attain their desired recreation outcomes.

PARTNERSHIPS: Strengthening BLM's capacity to forge sustainable relationships, increasing support for communities of place and communities of interest, improving business practices, increasing opportunities for volunteerism, and leveraging resources will more effectively engage potential cooperative managing partners and service providers. These relationships ultimately determine the quality of recreation products and services on public lands and in surrounding communities.

BLM must collaboratively identify beneficial outcomes, manage for sustainable setting character, and work through partnerships to affect the quality and kinds of public land recreation opportunities being produced.

4.2.4.1.2. Recreation Program Goals

Three Key Goals from "BLM's Priorities for Recreation and Visitor Services" include:

Goal 1: Improve access to appropriate recreation opportunities on Department of Interior (DOI) managed or partnered lands and waters

Goal 2: Ensure a quality experience and enjoyment of natural and cultural resources on DOI managed or partnered lands and waters

Goal 3: Provide for and receive fair value in recreation

These three goals were directly adopted from the DOI for inclusion in the BLM's program direction. They were later amended and consolidated into two goals. This Departmental change did not affect the direction or the objectives for the BLM as it incorporated all elements of the original three goals.

4.2.4.1.3. Recreation Program Priorities

Seven Key Objectives from "BLM's Priorities for Recreation and Visitor Services" are:

Objective 1: Manage public lands and waters for enhanced recreation experiences and quality of life

Objective 2: Encourage sustainable travel and tourism development with gateway communities and provide community-based conservation support for visitor services

Objective 3: Provide fair value and return for recreation through fee collection and commercial services

Objective 4: Establish a comprehensive approach to travel planning and management

Objective 5: Ensure public health and safety, and improve the condition and accessibility of recreation sites and facilities

Objective 6: Enhance and expand visitor services, including interpretation, information and education

Objective 7: Encourage and sustain collaborative partnerships, volunteers and citizen-centered public service

Identification of Areas of Importance to Guide Land Uses and Management

4.2.4.2. Alaska Recreation Program

Outdoor Recreation and Tourism is one of the few growth industries for the state. Alaska is viewed by the global Tourism industry as a unique niche market for arctic wildland adventure, as a wildlife haven, and as unspoiled wilderness that enjoys some of the highest levels of travel

and safety standards in the world. Public lands comprise the base product of the Alaska Tourism Industry. The quality of recreation resources and visitor services found in Alaska are central to the future environmental health and economy of the state. Resident visitors to public lands also place a high demand on public land recreation opportunities.

Public lands managed by BLM in Alaska are positioned in the growth path of the Recreation and Tourism Industry. The traditional key markets on the Kenai Peninsula and Denali Park Regions are over capacity where only marginal economic return can be anticipated for additional service and infrastructure improvements. Private, Native, State and Federal Tourism Providers and Recreation Business Managing Partners have sought to broaden offerings, expand infrastructure and grow the industry along the state's few highways. BLM lands are positioned along five (Dalton, Taylor, Denali, Steese, and Richardson) of the eight major Interior Alaska highways where the BLM is the major Federal recreation provider within the highway corridor.

To meet recreation demand over the years, BLM developed recreation sites, facilities and trails along these highway corridors. These developed sites along the highways are the portals by which the vast majority of visitors and residents access national recreation and conservation system areas. These developed sites are where BLM and its service delivery partners provide desired visitor and community services. Access to the millions of acres of public lands where dispersed and undeveloped types of recreation opportunities exist are by a combination of commercial airline, bushplane, snowmachine, boat, or other off-road vehicle. Special Recreation Permits are processed for commercial tourism (i.e. bus touring, hunting guides, river outfitters) and competitive recreation events on public lands throughout Alaska.

4.2.4.3. Eastern Interior Recreation Program

Although certain aspects and areas within the Eastern Interior FO's recreation management program are functioning well under the management direction provided by the White Mountains RMP and Steese RMPs, there are several issues that will need to be addressed during the current RMP revision process:

- Regional population growth;
- Increasing dispersed recreation use, both summer and winter;
- Popularity of public lands as a "backyard" recreation destination for local communities;
- Economic and social value of recreation and tourism;
- Citizen desire for a greater role in the management of their public lands;
- Budget allocations, which are flat or decreasing despite aging facilities and increasing demands;
- Technological advances, such as ATVs, utility terrain vehicles, and other OHVs, and mountain bikes, as well as better outdoor equipment and clothing; and
- Integrating recreation use with sustainable management of other resources.

Overall, recreation program management is becoming more complicated because recreational uses, demands, and impacts are increasing rapidly. Recreational users desire much more from their recreational pursuits than just participating in the activity itself; they desire specific experiences and beneficial outcomes. In response to these desires, BLM will use the new Benefits-Based Management (BBM) approach discussed in section 4.2.4.1. BBM will shift the focus from activities, programs, facilities, and projects to managing BLM's distinctive recreation settings for desired and targeted beneficial outcomes.

Current BLM guidance requires the incorporation of a BBM approach into RMPs (BLM 2005b, H-1601-1, Appendix C). The program direction referenced in the in the previous sections is derived from this new guidance, the Bureau's Unified Strategy (IM No. 2007 – 043, 01/09/07), and The BLM's Priorities for Recreation and Visitor Services, Workplan Fiscal Years 2003-2007, May 2003 (IB No. 2004-072). Instruction Memorandum No. 2006-060 also outlines important program strategy.

As recreation use continues to increase across the planning area, some of the management zones within the existing special recreation management areas (SRMAs) may no longer be relevant to current levels of demand and, more importantly, to the desires (experiences and beneficial outcomes) of recreational users. Further, the extensive recreation management areas (ERMAs) (Fortymile and Upper Black River Subunits) within the planning area may no longer be considered adequate for managing the higher concentration of use, and thus will need to be analyzed for SRMA allocation under the current planning process. SRMA allocations would allow the BLM to allocate funding for management, improvements, and/or developments in these areas, which could ultimately result in providing recreational users the opportunity to realize the experiences and beneficial outcomes they seek.

Decisions concerning designation of Recreation Opportunity Spectrum (ROS) categories are also currently inadequate. The nature, or setting, of many areas could have changed due to increased visitation and use. A new ROS inventory should be considered to provide a better assessment tool for determining development impacts to the recreation resources.

4.2.4.3.1. Special Recreation Management Areas

During the current RMP process, BLM will review existing SRMA allocations to ensure compliance with Planning Handbook guidance (BLM 2005). The new RMP must identify a distinct, primary recreation-tourism market (destination, community or undeveloped), as well as a corresponding recreation management strategy for existing SRMAs (i.e. Steese NCA and White Mountains NRA). If no distinct, primary recreation-tourism market can be identified, then the administrative identification of an SRMA should be removed.

The BLM is also required to identify new SRMAs during the land use planning process. Where recreation demand from a recreation-tourism market requires maintenance of setting character or production of associated activities, experiences, and benefit opportunities/outcomes, the area should be identified and managed as an SRMA, rather than being custodially managed as an ERMA. Both the Fortymile and Upper Black River subunits will be analyzed through the RMP process to determine if SRMA allocation is warranted.

In conformance with the policies in the National Program sections listed previously, and to better understand recreational tourism markets and user patterns and desires, studies were undertaken to measure activities, settings, experiences, and benefits associated with visitors to the Fortymile Corridor, Steese NCA and White Mountains NRA.

During the summer of 2007, a study was conducted by the University of Alaska – Fairbanks (UAF), to measure the recreation activities, settings, experiences, and benefits associated with summer visitors to the Dalton, Taylor and Denali Highways and the Fortymile National Wild and Scenic River (Stegmann et al. 2008). The study was intended to support a Benefits-Based Management approach to the recreation planning process by exploring different levels of

recreation demand. As part of the study, an on-site survey and follow-up mail-back survey were conducted during June, July and August, 2007.

A study was undertaken by UAF in 2006 to measure activities, settings, experiences, and benefits associated with visitors to the White Mountains NRA and Steese NCA (Fix 2008). The study was intended to support a Benefits-Based Management planning process. As part of the study, an onsite survey and follow-up mail/internet survey were conducted in 2006. The survey was designed to gather information on the four levels of recreation demand: activities, settings, experiences, and benefits. More specifically, the survey gathered information on visitors' most satisfying zone in the White Mountains NRA and Steese NCA.

4.2.4.3.2. Conclusion

Although BLM is currently managing each of the existing SRMAs and ERMAs with relative success, the current planning process provides an opportunity to make adjustments to recreation management strategies, where appropriate. Specifically, ROS setting classes could be delineated using Recreation Management Zones (RMZs) in newly created SRMAs (Fortymile Subunit) and adjusted in existing SRMAs (White Mountains and Steese Subunits). Once RMZs are identified, a specific market and niche could be identified and goals and objectives written for each zone. Finally, by using the results from the Benefits Based Management surveys listed previously, specific management prescriptions can be developed for each RMZ, which could produce opportunities, experiences, and benefits for individual users, user groups, and associated communities.

4.2.5. Travel Management

Many aspects of the management direction for motorized recreation set forth in the Steese RMP and White Mountains RMP has been useful. However, those RMPs could not, and did not, foresee the rapid and significant increase in OHV use throughout these units. This increase has produced route proliferation throughout the planning area.

For non-motorized vehicle use, increased levels of use have created conflicts between motorized and non-motorized users on trails, leading to newly created trails through intensive and casual use. While a few designated foot trails exist within the planning area, more emphasis could be placed on planning for, implementing, and maintaining trails that contribute to non-motorized recreational opportunities.

The following represent the primary opportunities for change regarding comprehensive trails and travel management:

- Identify ROS classes for each identified SRMA in the Eastern Interior planning area;
- Delineate Travel Management Areas (TMA) throughout the entire Eastern Interior planning area;
- Change the designation of OHV travel areas from "Open" to "Limited to Designated Routes" where applicable;
- Address all comprehensive travel management planning to include all resource use aspects (such as recreational, traditional, casual, agricultural, commercial, and educational) and accompanying modes and conditions of travel on the public lands, not just motorized or OHV activities. Acceptable modes of access and travel for each TMA should be identified. In developing these areas, the following will be considered:

  - Consistency with all resource program goals and objectives,
  - Primary travelers,
  - Objectives for allowing travel in the area,
  - Setting characteristics that are to be maintained (including ROS and VRM);
- Primary means of travel allowed to accomplish the objectives and to maintain the setting characteristics;
- Choosing and developing individual roads and trails, rather than simply using inherited roads and trails. Most existing roads and trails on public lands were created by use over time, rather than planned and constructed for specific activities or needs. Instead of a decision-making process to decide which individual roads and trails should be closed or left open, a broader range of possibilities for management of individual roads and trails, including reroutes, reconstruction or new construction, as well as closures should be considered; and
- Identify and solidify partnerships through the travel management planning process to help implement and manage future travel networks.

4.2.6. Transportation and Utility Corridors

This planning process provides an opportunity to review and revise existing transportation corridors and to designate new corridors for either transportation or utilities.

The Steese RMP (BLM 1986a) identified four transportation corridors; two in the South Steese and two in the North Steese. None of the four have been developed. The purpose and need for as well as the location of each corridor will be reviewed and evaluated. The only project in the works at this time is identification of a sustainable trail into the Great Unknown Creek area.

Since approval of the current RMP for the White Mountains NRA (BLM 1986b) approximately 16 miles of new road have been constructed in the Nome Creek valley. This new road provides access to both upper and lower Nome Creek and meets the purpose and need for both transportation corridors identified in the White Mountains RMP. It may be appropriate to eliminate the transportation corridor identified for lower Nome Creek and to revise the location of the transportation corridor for upper Nome Creek to coincide with the existing road.

A proposed land exchange on Yukon Flats National Wildlife Refuge between Doyon, Ltd and the FWS could result in an application for a right-of-way across BLM land in the White Mountains. Additionally, there is the potential for a natural gas pipeline to cross the planning area. The planning process provides and opportunity to consider the need for utility corridors to address potential future development.

4.2.7. Land Tenure

The BLM-Alaska goal is to have approximately 95% of all land entitlements conveyed to the State of Alaska, Native Corporations and Native allottees by the end of calendar year 2009. These conveyances may result in isolated parcels of BLM land that are not easily managed and might be suitable for exchange or disposal. This planning process provides an opportunity to identify lands that are suitable for disposal either by sale or exchange. The lands most likely to be identified for disposal will be located in areas along the highway system and around Fairbanks.

The Fortymile MFP included decisions to make lands available for disposal for community/urban expansion and for solid waste disposal sites. These decisions are no longer responsive to current issues as land status has changed substantially since the MFP as written and BLM does not generally own any lands that are suitable for waste disposal sites.

This planning process provides an opportunity to identify parcels for acquisition. Possible areas of interest for acquisition include inholdings within the Steese NCA, White Mountains NRA, and Fortymile NWSR. A decision in the Steese RMP to acquire approximately 14,000 acres of state inholdings in the NCA is still valid and should be carried forward. Additional parcels or areas of interest may be identified during development of the RMP.

One additional opportunity is to identify lands to be retained in Federal ownership. The White Mountains NRA and Steese NCA must be retained per ANILCA. The RMP may also identify other areas, such as proposed ACECs, as lands to be retained under Federal management. Lands in the Whickersham Dome area, are important to retain for recreational access and facilities associated with the White Mountains. BLM has several administrative sites and recreational site withdrawals most of which should be retained.

4.2.8. Withdrawals

It is Department of Interior policy to review existing withdrawals during land use planning to determine if there is a valid need to retain the withdrawals. All withdrawals will be reviewed to ascertain whether they should be retained, revoked or modified. There is a large number of withdrawals in the planning area. Many of these are withdrawals to other agencies. These withdrawals will be maintained unless relinquished by the holding agency. There are several BLM recreational withdrawals. These should be reviewed to determine if they are still necessary. If needed, new recreational withdrawals may be proposed.

Most of the land in the planning area is under 17 (d)(1) withdrawals. This refers to Sec. 17(d)(1) of ANCSA which authorized the Secretary of Interior to withdraw and reserve public lands for study and classification. This was done through a series of Public Land Orders (PLOs). The PLOs closed the lands to disposal and appropriation under public land laws, including mining and mineral leasing. The withdrawals kept the lands unencumbered for selection by ANCSA corporations, and prevented the creation of new third-party interests that would interfere with land conveyance. The withdrawals also allowed the BLM time to study and classify the lands.

The 17(d)(1) withdrawals are no longer responsive to current issues as ANCSA selections have been finalized. These 17(d)(1) withdrawals will be reviewed and recommendations will be made on retention, revision, or revocation. New withdrawals for resource protection may be proposed.

4.2.9. Special Designations

Research Natural Areas (RNA)

This land use planning process provides an opportunity to review management of existing RNAs and determine if any changes are needed. Current management of existing RNAs is generally adequate. However, some of the decisions should be reviewed to determine if they are protecting the resources for which the RNA was designated, while still providing for recreational opportunities.

The planning process also provides the opportunity for designation of new RNAs. No new RNAs were nominated during the scoping process. However, there was a proposal from the public to consider modifying the boundaries of some of the RNAs. This proposal will be evaluated and RNA boundaries could be adjusted if determined appropriate.

Wild and Scenic Rivers

Designated Rivers

There are currently three designated Wild and Scenic Rivers within the Eastern Interior Planning Area: Beaver Creek; Birch Creek; and Fortymile River. Each of these rivers is currently being managed under a respective River Management Plan.

Upon official designation into the Wild and Scenic Rivers System these three rivers within the planning area, were not assigned specific Outstandingly Remarkable Values (ORV). Congress mandated that such determinations be made by the river's managing agency, using the best possible professional judgment of its employees. Because specific ORVs were not identified initially for Beaver Creek, Birch Creek, or the Fortymile River, and due to the age of the River Management Plans, several management options now exist and will be considered during this resource management planning process:

- Continue current management direction as identified in the three River Management Plans through adoption during the current RMP process.
- Defer River Management Plan updates to implementation (i.e. step-down) level planning documents, which will be written following the completion of the RMP.
- Amend the River Management Plans through the RMP process, including the identification of ORVs for each of the three designated rivers.

Non-Designated River Segments

For those river segments that have not been previously designated, or have not undergone a Wild and Scenic Rivers review process, a review will be conducted through this planning process. Wild and scenic review has three steps: eligibility, tentative classification, and suitability. Eligible rivers within the planning area will be identified. Each eligible segment will be tentatively classified as wild, scenic, or recreational. The purpose of the suitability component is to determine whether eligible rivers are appropriate additions to the national system by considering tradeoffs between corridor development and river protection. This is done by comparing alternative ways of managing the river corridor, including an alternative assuming Congressional designation of all eligible river segments and an alternative assuming non-designation of all eligible river segments. Suitability considerations include the environmental and economic consequences of designation and the manageability of the river if it is designated. A range of alternatives for suitable rivers will be considered in the Draft RMP.

4.2.10. Social and Economic

Tribal Interest and Subsistence

The planning process provides an opportunity develop required operating procedures for BLM authorized activities that will result in the least adverse impacts possible on rural residents who depend upon subsistence resources and subsistence uses on public lands.

Hazardous Materials

There are no management decisions for hazardous materials under either the Steese RMP and White Mountains RMP. There are two hazardous materials decisions in the Fortymile MFP. The planning process provides an opportunity to develop required operating procedures for BLM authorized activities that will help prevent future hazardous materials sites.

Chapter 5. Consistency /Coordination with Other Plans

Management decisions made in the Eastern Interior RMPs must be consistent to the extent practical with officially approved or adopted resource management plans of other tribal, Federal, state, or local governments in the region. A list of applicable plans is shown in Table 5.1.

Upper Black River Subunit: Very few management plans cover lands in the Upper Black River subunit. This subunit is bordered on the north and west by the Yukon Flats NWR and the Arctic NWR, which is managed by the FWS, and on the south by the Yukon-Charley Rivers National Preserve, which is managed by the NPS. The eastern edge of the subunit is along the U.S./Canada border. Comprehensive conservation plans were completed for the Yukon Flats and Arctic NWRs in 1987 and 1988 respectively. A general management plan was completed for the preserve in 1985. The Black River area contains several Native corporation parcels and one large parcel of State land.

Fortymile Subunit: Many of the BLM-administered lands in the Fortymile subunit are surrounded by State lands that fall under the Upper Yukon Area Plan. The Fortymile subunit also contains lands belonging to Doyon Limited Inc. Regional Native Corporation and several Native Village corporations. The northern boundary of the Fortymile subunit is formed by the Yukon-Charley Rivers National Preserve, the Steese NCA, and the Chatanika River. The Tetlin NWR is located in the southeast edge of the Fortymile subunit. However, there is no BLM land immediately adjacent to the refuge. The eastern boundary of the subunit is the U.S./Canada border. There is limited BLM land along the border, north of Boundary, where the Fortymile River crosses into Canada.

Steese Subunit: Much of the Steese NCA is bordered by State lands, some of which are included in the Tanana Basin Area Plan. The NCA is bordered on the north by the Yukon Flats NWR and on the east by the Yukon-Charley Rivers National Preserve.

White Mountains Subunit: The White Mountains NRA is bordered on the north by the Yukon Flats NWR. The western and southern boundaries of the NRA are bordered by State lands included in the Tanana Basin Area Plan (DNR 1991). It is bordered on the east by the Steese NCA.

Table 5.1. Planning Documents and International Agreements Applicable to the Eastern Interior RMPs

Document Title	Date/Adopted
State of Alaska: Upper Yukon Area Plan	2003
State of Alaska: Tanana Basin Area Plan (currently under revision)	1991
State of Alaska: Tanana Valley State Forest Management Plan	2001
State of Alaska: Generally Allowed Uses on State Land	2006
FWS: Tetlin National Wildlife Refuge final comprehensive conservation plan (CCP)	1987
FWS: Yukon Flats National Wildlife Refuge CCP	1987
FWS: Arctic National Wildlife Refuge CCP	1988
FWS: Tetlin National Wildlife Refuge fishery management plan	1990
FWS: Yukon Flats National Wildlife Refuge fishery management plan	1990
NPS: Yukon-Charley Rivers National Preserve, Alaska general management plan	1985
NPS: Resource management plan, Yukon-Charley Rivers National Preserve	1994
Fairbanks North Star Borough Regional Comprehensive Plan (revised 2005)	2005
City of Delta Junction, Alaska: community development plan	1975

Community strategy plan for Beaver	1980
Community strategy plan for Chalkyitsik	1980
Community strategy plan for Eagle	1980
Comprehensive land use plan for the traditional lands of Stevens Village	1991
Community of Fort Yukon comprehensive plan	1996
Yukon River Salmon Agreement	2001
Final Recommended North Yukon Land Use Plan (North Yukon Planning Commission, Yukon, Canada)	2009

City or Community Plans

Several cities in the planning area have adopted community plans, including Delta Junction, Beaver, Chalkyitsik, Eagle, Fort Yukon, and Stevens Village. Most of these plans focus on community economic development. Subsistence is a vital part of the local economy and culture in many of the communities in the planning area. To the greatest possible extent, the BLM should ensure that activities on BLM lands near these communities support fisheries, wildlife and subsistence-related goals set forth in the community plans.

The Fort Yukon Comprehensive Plan (City of Fort Yukon 1996) notes that community members value deeply rooted traditions of subsistence hunting, fishing, and gathering. The plan also describes the importance of waterbodies in the Yukon Flats region to runs of Chinook, chum, and coho salmon. Salmon fishing activities by members of the community are concentrated within 10-20 miles of Fort Yukon (Sumida and Andersen 1990). The plan focuses on municipal services and achieving a sustainable economy compatible with local culture. Fort Yukon is located within the Yukon Flats NWR. There is no BLM-managed land in the planning area within 50 miles of Fort Yukon.

The comprehensive land use plan for the traditional lands of Stevens Village (Stevens Village Council 1991) called for limiting most economic development that would negatively impact the traditional lands of Stevens Village. Another goal mentioned in the plan is protecting the subsistence lifestyle by giving subsistence hunting, trapping, and fishing the highest priority. Stevens Village is located within the Yukon Flats NWR. There is no BLM-managed land in the planning area within 50 miles of Stevens Village.

The City of Delta Junction completed a community development plan in 1975 that focuses on economic development and community facilities and services (Tryck, Nyman & Hayes 1975). There is very little BLM-managed land near Delta Junction. The nearest large block of BLM-managed land is about 50 miles east of Delta Junction.

Community strategy plans were completed for the communities of Beaver, Chalkyitsik, and Eagle by the Tanana Chiefs Conference in 1980 (TCC 1980a, 1980b, 1980c). These plans focus on municipal services, but do mention the importance of maintaining subsistence activities and expanding economically without depleting natural resources. Beaver and Chalkyitsik are located within the Yukon Flats NWR. Beaver is located more than 30 miles north of the White Mountains NRA. Chalkyitsik is located approximately 40 miles west of the Upper Black River subunit. Eagle is located at the northern edge of the Fortymile Unit. There is some BLM-managed land in Eagle, including Fort Egbert and a BLM campground.

State Plans

The ADNR has written several plans for State lands in the Eastern Interior planning area, including the *Tanana Basin Area Plan for State Lands* (ADNR 1991) and the *Upper Yukon Area Plan* (ADNR 2003). The role of state land use plans is to establish a balanced combination of land available for both public and private purposes (AS 38.04.005). These area plans determine land-use designations, management intent, and management guidelines for state lands. In additional to general land use plans for the Tanana Basin area and Upper Yukon area, plans exist for the Tanana Valley State Forest and for the Chena River State Recreation Area. BLM-managed lands are in close proximity to State lands described in these plans.

The *Tanana Basin Area Plan for State Lands* (ADNR 1991) includes all state-owned and state-selected lands within the Tanana Basin planning area. The planning area includes State lands within the Fairbanks North Star Borough and lands both north and south of the Alaska Highway from Fairbanks to the U.S. Canada border. For the most part, it excludes the Fortymile River watershed. The plan sets area wide goals and policies pertaining to several major resource or land use categories including: Heritage resources, fish and wildlife habitat and harvest, forestry, mineral materials, recreation, tourism, settlement, mineral resources, transportation, and trapping cabins.

The Tanana Basin Area Plan is currently under revision. These revisions are needed to cover lands which were conveyed to the State since approval of the initial area plans and to reflect the current and anticipated physical, economic, and social factors in the area. The Yukon-Tanana Area Plan (in preparation) will revise the western portion of the Tanana Basin Area Plan (ADNR 1991). This revision overlaps with the BLM's White Mountains Subunit along the Elliot Highway near Livengood. The Eastern Tanana Area Plan (in preparation) will revise the eastern portion of the current Tanana Basin Area Plan (ADNR 1991). This revision overlaps with the BLM's Fortymile Subunit and contains a limited amount of BLM-managed land.

State lands not included within an existing area plan (like the upper Black River area) are governed by the Alaska Administrative Code and the Generally Allowed Uses identified by ADNR. The ADNR Fact Sheet, *Generally Allowed Uses on State Land* (May 2006) identifies uses and activities that are generally allowed on state land managed by the Division of Mining, Land and Water that is not in any special management category or status as listed in 11 AAC 96.014 1.

Many of the BLM-administered lands in the Fortymile River area border State lands that were included in the *Upper Yukon Area Plan* (ADNR 2003). The planning area is situated adjacent to the Canadian border, north of the Alaska Highway, and mostly south of the Yukon River. It encompasses the Fortymile NWSR. The plan divides the area into four regions, and designates acceptable uses for each region. The plan sets area wide goals and policies pertaining to the same major resource and land uses described for the *Tanana Basin Area Plan*.

Region 1, Middle Fork is largely comprised of the eastern portion of the calving area and most of the post-calving area for the Fortymile caribou herd. It is to be managed for multiple uses, primarily habitat, recreation, and mining. Activities in this region should avoid or minimize conflicts with caribou calving and other wildlife values. Management prescriptions for this region focus on the Fortymile caribou herd and Dall sheep.

Region 2, North Fork, includes the City of Eagle on the Yukon River and lands along the Taylor Highway north of Chicken. All lands within Region 2 are designated as General Use to maintain flexibility in management. The management intent for this region is to facilitate transportation needs related to State maintained roads and airports. The region does not have any lands designated for fish and wildlife. However, these resources will be recognized and considered

when authorizing activities on state land. Lands around the City of Eagle that are designated for settlement will be managed to provide for community expansion. The management intent for this region is to preserve scenic values along the Taylor Highway, minimize the number of access points onto the Taylor Highway, and reduce impacts to wildlife and other natural resources.

Region 3, South Fork, is situated south and west of Chicken. It includes the portion of the Taylor Highway between Tetlin Junction and Chicken. All lands within this region are designated as General Use. Region 3 is to be managed for multiple uses, primarily harvest, recreation, and mining. To maintain habitat and recreation values, no settlement areas are designated. The management intent is to preserve scenic values along the Taylor Highway, minimize the number of access points onto the Taylor Highway, and reduce impacts to wildlife and other natural resources. Important mineral licks for moose are identified in the Logging Cabin Creek area. Mining activity must avoid direct impacts or mitigate adverse impacts to the mineral licks and routes animals use to access them.

Region 4, Walker Fork, includes the communities of Chicken and Boundary, and lands along the Taylor and Top of the World highways. All lands within this region are designated as General Use. Similar to Regions 2 and 3, the management intent is to preserve scenic values along the Taylor and Top of the World highways, minimize the number of access points onto these highways, and reduce impacts to wildlife and other natural resources. Settlement areas have been identified in near Boundary, Chicken and along the Taylor Highway southwest of Chicken.

The *Tanana Valley State Forest Management Plan* (ADNR 1988, 2001) includes provisions for diverse habitat needs of fish resources, ensuring recreational access to public lands and waters, mitigating any reductions in the quality and quantity of fish habitat, protecting fish and wildlife resources and habitats that contribute to economic diversity, and enhancing the value of aquatic habitat through water control projects or vegetation manipulation.

The *Chena River State Recreation Area Master Plan* (ADNR 2006) focuses on recreation management. The nearest BLM-managed land is in the Steese NCA.

Federal Plans

The *Yukon Flats National Wildlife Refuge (NWR) Comprehensive Conservation Plan* (FWS 1987a) provides broad policy guidance for managing the refuge. The plan places all refuge lands in the minimal management category which provides maximum protection of the natural diversity of fish and wildlife populations and habitats occurring on the refuges. Management direction is to maintain the refuge in a basically undeveloped state; maintain traditional access; provide opportunities for subsistence; maintain opportunities for recreational activities; and continue to manage Beaver Creek as specified in the current river management plan. Additionally, the plan proposes the White-Crazy Mountains (650,000 acres) on the southern boundary of the refuge for designation as wilderness. The southern boundary of the refuge corresponds to the northern boundaries of the White Mountains NRA and the Steese NCA. The comprehensive conservation plan for Yukon Flats is currently being revised and updated (FWS 2008, http://alaska.fws.gov/nwr/planning/yfpol.htm).

The *Tetlin National Wildlife Refuge Final Comprehensive Conservation Plan* was completed in 1987 (FWS 1987b), and is currently being revised and updated (USFWS 2007). Some of the refuge goals include the conservation of fish, wildlife, and plant populations representative of the Upper Tanana Valley and the boreal forest ecosystem; conservation of migratory birds

and their habitats; provide subsistence opportunities for rural residents; provide compatible wildlife-dependent recreation opportunities; and protect and preserve the cultural heritage of the Upper Tanana Valley. There is no BLM land within the planning area adjacent to the Tetlin NWR and none of the watersheds in the refuge are near BLM-managed lands.

The *Arctic National Wildlife Refuge Final Comprehensive Conservation Plan* was completed in 1988 (FWS 1988). The refuge is divided into three management categories: 10.8 million acres are in a Minimal Management land-use category, 8 million acres are in congressionally designated Wilderness, and 401,000 acres are in a Wild and Scenic River category. The plan would maintain the existing range and intensity of management and recreational and economic uses. It would protect and maintain the refuge's fish and wildlife values and natural diversity. Opportunities for trapping, hunting, fishing, and other public uses would be maintained, as would scientific research and wildlife observation opportunities. The northern boundary of the BLM's Upper Black River Subunit is adjacent to the Arctic NWR. BLM lands are not adjacent to any designated Wilderness.

One goal in the *Yukon-Charley Rivers National Preserve General Management Plan* (NPS 1985) is managing the preserve to retain its existing wild character and wildland recreational opportunities. *The Yukon-Charley Rivers National Preserve Resource Management Plan* (NPS 1994) provides more details on the implementation of the general management plan, including specific project recommendations. BLM-managed land is adjacent to the preserve in the Upper Black River and Fortymile subunits, and the Steese NCA.

Canadian Plans

The *Final Recommended North Yukon Land Use Plan* (NYPC 2009) was completed in January 2009 and submitted to the Yukon and Vuntut Gwitchin governments for approval. The Plan provides a sustainable development framework for land management in the North Yukon Planning Region. It provides management direction for Yukon public lands and Vuntut Gwitchin First Nation settlement lands, outside of existing Protected Areas, Special Management Areas, and the community of Old Crow. It addresses two key issues: 1) oil and gas development in a significant portion of the annual range of the Porcupine Caribou herd; 2) management of development impacts in wetlands outside of Protected Areas. The Plan divides the region into 13 landscape management units. The Bluefish Lake-Keele Range (zone III) and the Kandik River (zone IV) management units are adjacent to the BLM's Upper Black River Subunit. Integrated management zone III lands allow for moderate development and zone IV lands allow for the highest level of development.

5.1. Fish and Water

5.1.1. Federal Plans

The *Yukon Flats National Wildlife Refuge (NWR) comprehensive conservation plan* (USFWS 1987a) states that the FWS will protect spawning areas and water quality to ensure the maintenance of fish populations. The preservation of wild stocks in their natural unenhanced state is the first priority. The plan also states that fisheries populations and their habitats will be managed to preserve natural diversity, and the pristine condition of fish values found on the refuge will be maintained. The plan notes that two species utilizing the refuge – Chinook salmon and coho salmon – were identified by the FWS as a national resource species. The *Yukon Flats*

NWR Fishery Management Plan (USFWS 1990a) provides greater detail on the management direction for fisheries resources in the refuge. Identified data needs include a survey and inventory of existing fishery resources, identification of spawning habitats and movement patterns, and determining fish utilization of various habitat types. The fishery management plan states that there are no known major concentrations of spawning Chinook salmon in refuge waters, but recognizes Beaver Creek as an important stream for chum salmon. In addition to Beaver Creek, both the Black River and Birch Creek flow through the Yukon Flats NWR after leaving BLM-managed land. There is a chum spawning area near the confluence of Kevinjik Creek and the Black River just after it crosses into the Yukon Flats NWR.

One goal in the *Yukon-Charley Rivers National Preserve General Management Plan* (NPS 1985) is managing to retain its existing wild character and wildland recreational opportunities. Arctic grayling and northern pike are common in the preserve, and Chinook, chum, and coho salmon, as well as sheefish are occasionally found in the Charley River. The plan describes studies such as identifying spawning habitat for important fish species and collecting baseline data on fish to measure effects of development and natural changes on fishery resources. The resource management plan for the Yukon-Charley Rivers National Preserve (NPS 1994) provides more details on the implementation of the general management plan, including specific project recommendations.

5.1.2. International Agreements

The Yukon River Salmon Agreement establishes a process for setting objectives for salmon escapement across the U.S.-Canada border. The two species for which escapement goals are set are Chinook salmon and fall chum salmon. Enumeration projects to determine cross border passage occur for Chinook salmon on the mainstem Yukon River near Eagle, Alaska, and for chum salmon on both the Yukon River and the Fishing Branch River, a tributary to the Porcupine River. BLM management of fisheries resources in the four planning area subunits does not directly affect border passage of salmon in either of these rivers. Nonetheless, management actions in the Eastern Interior planning area may affect Yukon River salmon populations to some degree. Given the small size of populations in rivers managed by the BLM in comparison with total Yukon River salmon population assessments, this impact is likely very small. In the Black River subunit, BLM's land use actions may affect salmon passage into Canada on the Salmon Fork Black River and the Kandik River. Chum salmon spawning has been documented in the Salmon Fork to the U.S.-Canada border, while Chinook salmon spawning has been documented in the Kandik River to the border (Johnson and Daigneault 2008).

5.1.3. State Plans

The *Tanana Basin Area Plan for State Lands* (ADNR 1991) established area-wide land management policies pertaining to fish and wildlife habitat and harvest. Goals for the area were to maintain and protect publicly owned habitat, ensure access to public lands and waters, mitigate habitat loss, and contribute to economic diversity while protecting fish and wildlife resources and habitats. The plan also identified critical habitat areas for fall chum salmon spawning in the Toklat and Delta rivers, which provide relatively warm upwelling spring water through the winter. These rivers are outside the Eastern Interior planning area.

Many of the BLM-administered lands in the Fortymile River area border state lands that were included in the *Upper Yukon Area Plan* (ADNR 2003). In Region 2, it was noted that the lower

Seventymile River is listed in the Anadromous Waters Catalog (Johnson and Daigneault 2008). Therefore, the BLM should ensure that land management actions in the upper part of the watershed do not adversely affect salmon in the lower river. Region 3, which includes the South Fork Fortymile River, upper Mosquito Fork, upper West Fork, Dennison Fork, and Ladue River, supports resident fish populations of Arctic grayling, sheefish, and whitefish. The Ladue River was identified as being a productive area for Arctic grayling and whitefish. The Ladue River flows through some state lands. Resident fish identified in Region 4 – the Walker Fork, lower Mosquito Fork, and mainstem South Fork – include Arctic grayling, sheefish, and whitefish.

The *Upper Yukon Area Plan* (ADNR 2003) also listed rivers which the State asserts are navigable. Navigability determinations have implications for subsistence fishery management and regulations. The rivers asserted as navigable are the Fortymile River, North Fork to the confluence with Independence Creek, Middle Fork to the confluence with Joseph Creek, South Fork, Walker Fork, Dennison Fork to the confluence with West Fork, West Fork to the confluence with Logging Cabin Creek, and Mosquito Fork to the confluence with Kechumstuk Creek. The BLM does not agree with the State on all navigability determinations.

Fish habitat goals outlined in the *Tanana Valley State Forest Management Plan* (ADNR 1988, 2001) include providing for diverse habitat needs of fish resources, ensuring recreational access to public lands and waters, mitigating any reductions in the quality and quantity of fish habitat, protecting fish and wildlife resources and habitats that contribute to economic diversity, and enhancing the value of aquatic habitat through water control projects or vegetation manipulation. Structures in fish-bearing waters should minimize impacts to fish migration, spawning, and rearing, and water intake structures should prevent entrapment or injury of fish. Special management zones were also designated with a minimum width of 100 feet landward from the ordinary high water mark, in part to protect important spawning and rearing habitat and resident fish populations.

The *Chena River State Recreation Area Master Plan* (ADNR 2006) focuses on recreation management, including collaboration with ADF&G to stock ponds with sport fish species. Arctic grayling are the most popular sport fish in the Chena River, and they are protected under catch and release regulations. Chinook and chum salmon spawn in the Chena River, but salmon fishing is closed above the Chena River dam.

5.2. Travel Management and Recreation

5.2.1. ANCSA 17(b) Easements

Management of easements requires coordination and consistency with Federal and State plans. Those 17(b) easements which access lands managed by other DOI agencies are managed by that agency. Comprehensive region-wide inventory and management of 17(b) easements under DOI jurisdiction require interagency cooperation and coordination. Comprehensive region-wide inventory and management of 17(b) easements requires intergovernmental cooperation. The Native corporations or other local entity would like to be paid to manage 17(b) easements. There is also the issue of what is allowed on the easement regarding OHVs.

5.2.2. Fortymile Subunit

The State of Alaska *Upper Yukon Area Plan*states: "When consistent with the State's best interest, state lands that adjoin the Wild and Scenic River should be managed to minimize conflicts with the management theme described in the River Management for the adjoining uplands."

The main stem of the Fortymile River, and certain portions of its tributaries, have been determined to be navigable, either through Federal navigability determinations or state assertions of navigability. The basic conflict concerning the Fortymile Wild and Scenic River corridor is the difference in management approach. The BLM views the Fortymile River corridor and its adjacent uplands as components of the Wild and Scenic River system, and associates this area with a corresponding management philosophy. The state has authorized mining activities within certain shorelands of the Fortymile River. This type of activity can be viewed as inconsistent with the Wild and Scenic River designation. This issue has been extensively reviewed and discussed previously. No significant agreements have been reached on the management of the river. The area plan cannot resolve this disagreement in management approach, and makes no specific attempt to do so.

The *Yukon-Charley Rivers National Preserve General Management Plan*(1985) contains the Charley Wild River Management Plan, which identifies natural, cultural, and recreational values as Outstandingly Remarkable Values for the river (pp. 100-102). The BLM will consider these values when planning for lands in the within the Charlie Rivers watershed.

5.2.3. Steese, White Mountains and Upper Black River Subunits

Management of recreation and travel on BLM-managed lands in the Steese, White Mountains, and Upper Black River subunits will require coordination and consistency with other Federal, State and local plans. Although remote, the Upper Black River Subunit is adjacent to the Yukon Flats NWR, the Arctic NWR, and the Yukon-Charley Rivers NP. The Steese and White Mountains subunits are bordered by the Yukon Flats NWR and the Yukon-Charlie Rivers NP is adjacent to the Steese. Additionally, BLM management will need to consider the Fairbanks North Star Borough Regional Comprehensive Plan (FNSB 2005) which is currently under revision. The North Star Borough is adjacent to the Steese and White Mountains subunits, and the majority of the visitors to these subunits are Borough residents. One of the strategies of the comprehensive plan is to integrate safe multiuse trail circulation into road networks and maintain multiuse trails for commuter and recreational purposes.

Management of State lands south of the Steese and White Mountains is guided by the State of Alaska, *Tanana Basin Area Plan* (ADNR 1991). There is little State land in the Upper Black River Subunit and these lands are not covered by an existing area plan.

The *Tanana Basin Area Plan* identifies the following public access goal: …maintain, enhance, or provide adequate access to public and private lands and resources (pp. 2-14). Provisions may be allowed for travel by foot, dogsled, horseback, and snowmachine, while travel by all terrain vehicles and wheeled vehicles may be reserved. Off-road use of such vehicles as snowmachines, jeeps, and small all-terrain vehicles are a generally allowed activity on state land (pp. 2-33). Recreation is an identified use in the 1987 *Yukon Flats NWR Comprehensive Conservation Plan, Environmental Impact Statement and Wilderness Review* (p. xix). The *Yukon-Charley Rivers National Preserve General Management Plan* (NPS 1985) allows for the use of aircraft, boats, and snowmachines. Recreational use by other off-road, or all-terrain vehicles will be prohibited.

Helicopter use requires a written permit while the airstrip in the Upper Charley will not be maintained or upgraded but can be used at pilots discretion (paraphrased from page 61).

The Upper Black River Subunit also shares a border with Canada. Management direction for lands in Canada is guided by the *Final Recommended North Yukon Land Use Plan* (NYPC 2009). Road, air and water are all important modes of transportation in the region, but transportation and access options are currently very limited (p. 5-23). There is no existing transportation infrastructure in the Bluefish Lake-Keele Range Land Management Unit or in the Kandik River Land Management Unit, but an access route to Rusty Springs mineral property has been utilized historically in the Kandik River LMU (p. 6-34) and there are some winter trails in the Bluefish Lake – Keele Range LMU (p. 6-14). There is low interest in recreation and tourism in both the Bluefish Lake-Keele Range (p. 6-14) and the Kandik River (p. 6-34) Land Management Units.

5.3. Lands and Realty

Conveyances are ongoing to the State and various regional and village native corporations. The concurrence of the State of Alaska is required before BLM authorizes activities on state selected lands. A letter of non-objection from the native corporation is required before BLM authorizes activities on native selected land. Adjudication of native allotment and veteran native allotment claims is ongoing. Because conveyance is ongoing, the State would prefer that any management prescribed by BLM on State-selected lands be consistent with their area plans so that conflicts in land use are not created after conveyance.

5.4. Cultural and Paleontological Resources

The basic requirements of BLM's cultural and paleontological resource programs are laid out by the relevant Federal legislation (Chapter 6). Consequently, cultural and paleontological programs in other Federal agencies, especially land-managing agencies, are very similar to the BLM's. Inventory, research, monitoring, and public education/interpretation where appropriate, make up a large part of the cultural and paleontological resource programs for any Federal land managing agency, with different emphases occurring in different regional contexts and with agencies' different Federal missions. Given this overall similarity, consistency among Federal agencies is almost unavoidable. Of course, there are special circumstances where large projects or linear sites cross multiple agency lands, and in these cases closer coordination would be required.

The primary need for consistency with the State of Alaska derives from the need to maintain consistency with the statewide database of known archaeological and paleontological sites, the Alaska Heritage Resources Survey (AHRS), which is maintained by the Office of History and Archaeology in the Department of Natural Resources, Division of Parks and Outdoor Recreation. We are committed to using this database through the Alaska protocol (see Chapter 6), and have contributed and continue to provide BLM funds towards AHRS database enhancement.

There is a clear need for close cooperation and coordination with local Native groups for certain aspects of the cultural resource program. In particular, the issuance of permits for some excavations under the Archaeology Resources Protection Act (ARPA) and the repatriation requirements of the Native American Graves Protection and Repatriation Act require coordination with Native groups. Also, consultations under Section 106 of National Historic Preservation Act may involve Native groups as well as other interested parties.

5.5. Forestry

Federal Plans

The Eastern Interior planning area either includes or is bordered by numerous other Federal agency's including the Yukon Flats NWR, the Arctic NWR, the Tetlin NWR, and the Yukon Charley National Park and Preserve. The Park Service does not allow timber harvest on park lands. The Fish and Wildlife Service could allow silviculture treatments if they benefit wildlife populations. Sales of forest products have occurred, but are rare. It is unlikely this would change in the future.

State Plans

A significant portion of the Tanana State Forest lies within the Fortymile subunit of the BLM's Eastern Interior planning area. The *Tanana Valley State Forest Management Plan* (ADNR 1988, 2001) provides management direction for these lands. The Tanana State Forest is managed by the ADNR for a sustained yield of many resources. The primary purpose is the production, use and replenishment timber while perpetuating personal, commercial and other beneficial uses and resources through multiple use management. The portion of the Tanana State Forest within the planning area lies entirely within the Tanana River watershed of which BLM manages a limited amount of land. These limited parcels should not pose any irregularity to the Tanana State Forest Plan.

Local and Native Corporation Plans

The Fairbanks North Star Borough, several towns, and a number of villages and Native corporations exist within the planning area. Many have some form of planning document related to resource management. At this time, no review of these plans has taken place to assess the consistency of management policy with those of BLM for Forest resources.

5.6. Subsistence

Federal Plans

Four Federal land management plans have been identified in the areas surrounding the Eastern Interior planning areas (Table 5.1). Much of the BLM land in the planning area and all adjacent Federal lands were designated by ANILCA. Each area has differing mandates but all comply with ANILCA Title VIII for subsistence management and use. Therefore, in most cases, directions and implications of these four plans are consistent with current BLM planning efforts within the area. Wildlife and ecosystems traverse political boundaries independent of land status. Past efforts to cooperate with adjacent land managers to manage important resources, such migratory birds and caribou, will continue and likely increase.

The*Yukon Flats National Wildlife Refuge comprehensive conservation plan* (USFWS 1987a) provides for the continued undeveloped nature of the Yukon Flats NWR. This "minimal management category" allows maximum protection of the natural diversity of fish and wildlife populations and habitats that occur on the refuge. Management direction that affects subsistence

uses includes: maintaining the refuge in an undeveloped state; emphasis on maintaining the refuge's natural diversity of fish and wildlife populations and habitats; maintaining traditional access opportunities; and providing opportunities for continued subsistence use of refuge resources. Current opportunities for participation in traditional activities are maintained. The comprehensive conservation plan further states that Yukon Flats NWR will cooperate with ADF&G and other agencies to ensure continued subsistence opportunities by assessing potential impacts of proposed uses or activities, conducting research, enforcing regulations, and monitoring fish and wildlife populations and uses. A subsistence management plan was not developed from the comprehensive conservation plan as was done for other resources such as fisheries.

The *Tetlin National Wildlife Refuge Final Comprehensive Conservation Plan* (USFWS 2008) includes objectives that allow for subsistence use of the Mentasta Caribou Herd while minimizing incidental harvest of the Fortymile and Nelchina caribou herds. Emphasis is placed on determining abundance of many subsistence resources and identifying environmental variables affecting abundance including fire effects on subsistence resources and their habitats.

The *Arctic National Wildlife Refuge plan*(FWS 1988) calls for maintaining the refuge in an undeveloped state while emphasizing maintenance of the refuge's natural diversity and key fish and wildlife populations and habitats; maintaining traditional access opportunities and providing for continued subsistence use of refuge resources. Management direction provides for: coordination with other resource management agencies; collection of data on fish and wildlife species; ensuring that populations and ecological relationships necessary to conserve natural diversity are maintained; and ensuring that subsistence opportunities are maintained by assessing potential impacts of land use activities, conducting research, enforcing regulations, and monitoring fish and wildlife populations and uses.

The *Yukon-Charley Rivers National Preserve General Management Plan* (NPS 1985) maintains the preserve's wild character, which will ensure continuation of established subsistence activities. Use of OHVs are not allowed in the preserve except snowmachine travel for overland access associated with subsistence activities. Furthermore, the plan states that the State of Alaska will coordinate with the superintendant to give priority consideration to Federal subsistence uses over all other uses, curtailing subsistence activity only if it threatens the viability of populations on which subsistence users depend.

International Plans and Agreements

Many land use and other management plans and agreements have been or are being developed in neighboring Canada. Three of these are relevant to the BLM's Eastern Interior planning effort: the *Porcupine Caribou Herd Management Plan*(PCHM plan) (PCMB 2000), *International Porcupine Caribou Agreement*(1987) and the *Final Recommended North Yukon Land Use Plan* (NYPC 2009) . The PCHM plan is currently in revision by the Porcupine Caribou Management Board (RCHB in preparation). The North Yukon Land Use Plan considers land on the Yukon North Slope, some of which is adjacent to the BLM's Upper Black River Subunit. Critical habitat for the Porcupine Caribou Herd, which is an important subsistence resource in Yukon and Alaska, has been identified in the North Yukon Planning region. A land use plan is in early development for the Dawson Planning region, which lays directly south of the North Yukon region.

State Plans

The *Tanana Basin Area Plan for State Lands* (ADNR 1991) recognizes the importance of subsistence uses but doesn't define or differentiate between state and Federal subsistence laws. Specific management units important for subsistence are identified. General land use goals allow for contributions to economic diversity of the planning area while protecting the fish and wildlife resources and habitats that contribute to subsistence (and other) uses.

The *Upper Yukon Area Plan* (ADNR 2003) treats subsistence consistent with the Tanana Basin plan but clearly defines subsistence in terms of State law (*AS 38.04.015, AS 38.04.200(b)(3),* and *AS 38.05.830*). The plan goes further to "avoid or minimize interference with subsistence activities or traditional uses when authorizing land and water use activities."

The *Alaska Comprehensive Wildlife Conservation Strategy* (ADF&G 2006) contains many conservation actions aimed at collecting data on "nongame" subsistence species, including harvest data, obtaining local knowledge, and involving communities in monitoring projects of many subsistence resources that are not funded by traditional funding sources.

5.7. Non-Native Invasive Species

Federal Plans

Four Federal land management plans have been identified in the areas surrounding the Eastern Interior planning area. These are the *Yukon Flats National Wildlife Refuge Comprehensive Conservation Plan* (FWS 1987a), *Yukon-Charley Rivers National Preserve General Management Plan* (NPS 1985), *Tetlin National Wildlife Refuge Final Comprehensive Conservation Plan* (FWS 2008), and the *Arctic National Wildlife Comprehensive Conservation Plan* (FWS 1988). The Tetlin plan is the only of these plans to address non-native invasive species. Coordination with other agencies is essential when considering invasive species. Past efforts to cooperate with adjacent land managers to prevent the introduction and spread of NIS, especially plants, will continue and likely increase.

Objectives and management decisions from the Tetlin Comprehensive Conservation Plan include management of NIS, particularly plant species, and provides for cooperative efforts to prevent introduction and spread of non-native, invasive plants. The plan provides direction for "preventing, controlling, and eradicating invasive species within and adjacent to the Refuge."

International Plans

One international plan that is adjacent to the planning units is currently awaiting approval, the*Recommended North Yukon Land Use Plan*(NYPC 2009). Best Management Practices for reclamation of surface disturbances includes the use of native, endemic plants whenever possible. Direction specifically for management of NIS is not included in the document. As planning in the Dawson region begins, Federal and state agencies in Alaska are likely to work across borders to further cooperation in managing NIP. The Alaska Committee for Noxious and Invasive Plants Management (CNIPM) and the Yukon Invasive Plant Committee (YSIC) currently work together to coordinate research and management of NIS. Efforts to manage NIS are likely to increase between Yukon and Alaska.

State Plans

Neither the *Tanana Basin Area Plan for State Lands* (ADNR 1991) or the *Upper Yukon Area Plan* (ADNR 2003) include non-native invasive species in the plan discussion or decisions.

The goal of the *Alaska Comprehensive Wildlife Conservation Strategy* (ADF&G 2006) is to "conserve the diversity of Alaska's wildlife resources, focusing on those species with the greatest conservation need." The strategy covers wildlife conservation activities that have not been adequately funded through traditional means, such as license revenues, and wildlife (Pittman Robertson) and sport fish (Dingell Johnson) Federal aid restoration programs. Emphasis on monitoring the effects of invasive species on wildlife and their habitats. ADF&G has been actively involved in the ISWG and CNIPM.

5.8. Fire Management

There are no laws or regulations specific to fire that contains consistency requirements or constraints. Because of checkerboard ownership of multiple Federal agencies, multiple Native organizations, and the State of Alaska, consultation and coordination are a must when any fire planning, decisions or policies are developed. The thirteen original fire management plans and the consolidation of those plans, Alaska Interagency Fire Management Plan, were written to blur ownership boundaries and plan for landscapes rather than each individual manager/owners land. They contain requirements for joint decision making. Because of this situation, consultation and coordination are a necessity for making decisions that can implemented successfully. National fire policy also contains requirements for a collaborative approach when any fire planning is done.

5.9. Wilderness Character

Management on adjacent lands will need to be considered when addressing wilderness character on BLM-managed lands.

State Plans

State of Alaska Tanana Basin Area Plan (ADNR 1991): Specific management prescriptions are covered under Management Unit 1U with subunits 1U3c, 1T1, 1R1 and 1S1 being adjacent to the Steese NCA. Uses identified for either primary or secondary management are fish and wildlife habitat, minerals, recreation, forestry and settlement. Most of the area is open to development of subsurface resources. Much of the surrounding lands generally appear to be affected primarily by the forces of nature with very little to no signs of human activity, except Faith Creek, Bachelor Creek, Porcupine Creek and Crooked Creek watersheds which have had extensive mining.

State of Alaska Upper Yukon Area Plan (ADNR 2003): State lands are divided into four regions under this plan. These lands are adjacent to BLM lands in the Fortymile Subunit.

Region 1 – Middle Fork: occupies most of the northwestern portion of the planning area adjacent to a large part of Middle Fork and the upper reaches of the North Fork. Because of the remoteness of this region, the level of recreational activity is not as high as the rest of the planning area. Region 1 is to be managed for multiple uses, primarily habitat, recreation, and mining.

Region 2 – North Fork is the second largest and constitutes most of the northern half of the planning area and is adjacent to the North Fork, Champion Creek, Hutchinson Creek, O'Brien Creek and the main stem of the Fortymile. Region 2 is to be managed as General Use which allows

flexibility in management, since these lands consist of large amounts of acreage, current levels of demand for their use is relatively low, and a variety of uses can be accommodated with appropriate sitting and design considerations for multiple uses, primarily habitat, recreation, and mining.

Region 3 – South Fork is the largest of the four regions and is surrounds Logging Cabin Creek. The majority of recreation is associated with fish and dispersed wildlife harvest activities. The region is also used for hiking, skiing, camping, snowmachining, and dog mushing by both residents and visitors. Region 3 is to be managed for multiple uses, primarily harvest, recreation, and mining.

Region 4 – Walker Fork is situated in the center of the planning area, with its eastern edge formed by the international border with Canada and include lands adjacent to Mosquito Fork, West Fork South Fork, Walker Fork and the south side of the Main Stem. Recreation takes many forms in this region, but the area is most widely known for rafting and boating on the South Fork, Mosquito Fork, Dennison Fork, Walker Fork, and tributary creeks. The region is also used for hiking, skiing, camping, snowmachining, and dog mushing by both residents and visitors. The management intent for Region 4 is to preserve scenic values along the Taylor Highway and Top of the World Highway, minimize the number of access points onto these highways, and reduce impacts to wildlife and other natural resources.

Federal Plans

Arctic National Wildlife Refuge Comprehensive Conservation Plan (FWS 1988): lands adjacent to BLM-managed lands in the Upper Black River Subunit are managed under a "Minimal Management" classification , a category intended to maintain existing natural conditions and resource values. These areas are suitable for Wilderness designation, although there are presently no proposals to designate them as Wilderness (FWS 1988). There is an existing wilderness designation in the Arctic NWR. However, it is not adjacent to BLM-managed lands or the Eastern Interior Planning Area.

Yukon Flats NWR Comprehensive Conservation Plan (FWS 1987): The 650,000 acres to the north of the White Mountains National Recreation Area are managed as a Wilderness Study Area. This area is pending formal Wilderness designation.

Yukon-Charley Rivers National Preserve General Management Plan (1985): The lands to the east of the Steese NCA were identified as suitable for wilderness designation and identified as the Charley unit. Lands to the south of the Upper Black River area were identified as suitable for wilderness designation and identified as the Eureka.

International Plans

Final Recommended North Yukon Land Use Plan, Canada (NYPC 2009): This plan did not identify any wilderness areas adjacent to the BLM's Upper Black River Subunit. However, most of the land adjacent to the international boundary and the Upper Black River Subunit probably meets BLM's definition for naturalness.

Native Corporation or Tribal Plans

Native lands either do not currently have land use plans or they are community plans that focus on lands immediately adjacent to villages. These plans tend to focus on community economic development and thus wilderness characteristics have not been addressed. However, much of the Native corporation lands generally appear to have been affected primarily by the forces of nature with minimal signs of human activity.

Chapter 6. Specific Mandates and Authority

How to Read This Chapter

This chapter lists mandates and authorities applicable to management of public lands managed by the BLM. It provides an overview of the legal and policy direction which guides management of BLM lands in Alaska. While an effort was made to include all relevant laws, regulations, and policies, it is not a comprehensive list.

The mandates and authorities listed in section 6.1, Mandates and Authorities Pertaining to All Resources, apply broadly to all BLM programs. In most cases, these will not be repeated under specific program areas. Additional program specific laws and regulations are listed under each program. Each section lists relevant laws, executive orders, Federal regulations, general policy, applicable NEPA documents, Memorandums of Understanding (MOUs), BLM manuals and handbooks, and any applicable State laws and regulations that may affect BLM management. In some cases, programs with a lot of overlapping authorities were combined into one section (e.g. Fish, Wildlife, and Special Status Species). For programs where there are no applicable MOUs, NEPA documents, or relevant state laws, these sections are not listed.

6.1. Mandates and Authorities Pertaining to All Resources

6.1.1. Federal laws, regulations, statues and orders

Alaska National Interest Lands Conservation Act (ANILCA) of 1980 (16 U.S.C. 3101 et seq.): This Act provides for the special designation of certain public lands in Alaska and conservation of their fish and wildlife values; management for subsistence uses of fish, wildlife, and other renewable resources on public lands by residents of rural Alaska; and protection of wildlife resources on North Slope lands impacted by oil and gas exploration and development activities.

Alaska Native Claims Settlement Act (ANCSA) of 1971 (43 U.S.C. 1601-1629f, 1631-1642): This Act provides for a fair and just settlement of all claims by Natives and Native groups of Alaska, based on aboriginal land claims. It requires transfer of 45 million acres of public land to Native corporations.

The Alaska Statehood Act of 1958 (P.L. 85-508): This Act requires the transfer of 104 million acres of public land to the State of Alaska.

Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 U.S.C. 1701 et seq.): Outlines the functions of the BLM Directorate, provides for administration of public lands through the BLM, provides for management of the public lands on a multiple use basis, and requires land-use planning including public involvement and continuing inventory of resources. The Act establishes as public policy that in general, public lands will remain in Federal ownership, and also authorizes: acquisition of lands or interests in lands consistent with the mission of the Department and land use plans; permanent appropriation of road use fees collected from commercial road users, to be used for road maintenance; collection of service charges, damages, and contributions and use of funds for specified purposes; protection of resource values; preservation of certain lands in their natural condition; compliance with pollution control laws; delineation of boundaries in which the Federal government has right, title, or interest; review of land classifications in land use planning; and modification or termination of land classifications when consistent with land use plans; sale of lands if the sale merits certain disposal criteria; issuance, modification, or revocation of withdrawals; exchange or conveyance of public lands

if in the public interest; outdoor recreation and human occupancy and use; management of the use, occupancy, and development of public lands through leases and permits; designation of Federal personnel to carry out law enforcement responsibilities; determination of the suitability of public lands for rights-of-way purposes and specifications of the boundaries of each right-of-way; recordation of mining claims and reception of evidence of annual assessment work. The Act further directs the Secretary of the Interior to take any action necessary to prevent "unnecessary of undo degradation of the lands."

National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.): Establishes a national policy for the protection and enhancement of the human environment. This Act requires that agencies prepare environmental impact statements for Federal actions expected to significantly affect the quality of the human environment. In addition, agencies are required to use a systematic, interdisciplinary approach in planning and decision making processes that will affect the environment.

Environmental Quality Improvement Act as amended (42 U.S.C. §4371 et seq.): This Act established the Office of Environmental Quality to support the work of the Council of Environmental Quality and to further assure that each Federal department and agency involved with programs affecting the environment implement appropriate policies.

Executive Order (E.O.) 13148, Leadership in Environmental Management, April 21, 2000: Makes Federal agencies responsible for ensuring that all necessary actions are taken to integrate environmental accountability into day-to-day decision making and long-term planning processes, across all agency missions, activities, and functions. Environmental management considerations must be a fundamental and integral component of Federal Government policies, operations, planning, and management.

E.O. 11514, Protection and Enhancement of Environmental Quality, March 5, 1970 (35 FR 4247), as amended by E.O. 11991, May 24, 1977: This E.O. states that the Federal government shall provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. It provides for monitoring, evaluating, and control on a continuing basis of the activities of each Federal agency so as to protect and enhance the quality of the environment.

E.O. 11752, December 19, 1973: This order mandates that Federal agencies shall provide national leadership to protect and enhance the quality of air, water, and land resources through compliance with applicable Federal, State, interstate, and local pollution standards. It directs Federal agencies to design, construct, manage, operate, and maintain its facilities in a manner to protect and enhance environmental quality through cooperation with State and local governments. This order cross-references the need to comply with several environmental acts such as the Clean Air Act, Federal Water Pollution Control Act, Solid Waste Act, Noise Control Act, Insecticide and Pesticide Acts, and NEPA.

Secretarial Order 3226A1, Climate Change Impacts, January 16, 2009: This order directs agencies to consider and analyze potential climate change impacts when undertaking long-range planning exercises, setting priorities for scientific research and investigations, developing multi-year management plans, and/or when making major decisions regarding the potential utilization of resources.

6.1.2. BLM Manuals and Handbooks

- **BLM Manual 1601**: Land Use Planning (BLM 2000)
- BLM Land Use Planning Handbook H-1601-1 (BLM 2005)
- BLM Handbook H-1790-1, National Environmental Policy Handbook (BLM 2008)
- WO I.M. 2005-037, A Desk Guide to Cooperating Agency Relationships

6.1.3. Policies

BLM policies are outlined in a variety of sources including Federal laws, manuals, handbooks, Executive Orders (EO), and Instruction Memorandums (I.M.) and are to numerous to list fully. The FLPMA is BLM's organic act and it establishes a national policy that "... the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values…". BLM manuals include specific policy for each manual subject. The BLM Alaska Statewide Land Health Standards (BLM 2004) outlines BLM-Alaska's policy on land health.

6.2. Air Quality

6.2.1. Federal laws, regulations, statues and orders

Clean Air Act of 1990, as amended (42 U.S.C. 7418): Requires Federal agencies to comply with all Federal, State, and local requirements regarding the control and abatement of air pollution. This includes abiding by the requirements of State Implementation Plans.

Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109): Requires and encourages prevention and reduction of waste streams and other pollution through minimization, process change, and recycling. Encourages and requires development of new technology and markets to meet objectives.

E.O. 11738, September 10, 1973: This order directs each Federal agency to enforce the Clean Air Act and the Clean Water Act in the procurement of goods, materials, and services.

E.O. 12088, Federal Compliance with Pollution Control Standards, October 13, 1978 (43 FR 47707): This amended E.O. states that each agency is responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution, with respect to Federal facilities and activities under the control of the agency.

- **29 Code of Federal Regulations (CFR) 1910:** Occupational Safety and Health Standards, Special provisions for air contaminants.
- **40 CFR Protection of the Environment; PART 50:** National Primary and Secondary Ambient Air Quality Standards.

6.2.2. Policies

Department of Interior and BLM policies are generally encompassed by the Federal laws and regulations listed above and may provide specific guidance for particular issues. It is the policy of the BLM to ensure BLM activities are conducted in a manner that achieves and maintains air quality standards in cooperation with other agencies responsible for maintaining air quality.

6.2.3. BLM Manuals and Handbooks

- **BLM Manual 7000 Series:** Soil, Water, and Air Management (various release dates)
- **BLM Manual 7200 Series:** Water Resources (various release dates)

6.2.4. State Laws and Regulations

- **Alaska Statute (AS):** Water, Air, Energy and Environmental Conservation (Title 46): Environmental Conservation laws for the State of Alaska.
- **Alaska Administrative Code (18 AAC 50)** State of Alaska Ambient Air Quality Standards and Regulations

6.3. Soil Resources

6.3.1. Federal laws, regulations, statues and orders

Classification and Multiple-Use Act (78 stat. 986, U.S.C. 1411-18), 43 CFR 1725.3-3(h) as of October 1, 1981: One of the objectives of public land management listed in the Act is "Watershed Protection", which is defined as the protection, regulated use, and development of any public lands in manner to control runoff; to minimize soil erosion, siltation, and other destructive consequences of uncontrolled water flows; and to maintain and improve storage, yield, quality, and quantity of surface and subsurface waters.

Farmland Protection Policy Act of 1984 (7 U.S.C. 4201–4209): Federal agencies are (a) to identify and take into account the adverse effects of their programs on the preservation of farmland, (b) to consider alternative actions, as appropriate, that could lessen adverse effects, and (c) to ensure that their programs, to the extent practicable, are compatible with State and units of local government and private programs and policies to protect farmland.

Soil Conservation and Domestic Allotment Act of 1935, as amended, April 27, 1935 (P.L. 74-46): By Reorganization Plan No. IV and Secretary Order 2835, this Act authorizes the BLM to conduct and publish surveys, investigations, and research relating to the character of soil erosion; to disseminate information on erosion prevention measures; and to conduct demonstration projects in areas subject to wind and water erosion. The Act further provides for the "preservation and improvement of soil fertility, promotion of economic use and conservation of land, and diminution of exploitation and wasteful and unscientific use of national soil resources."

Soil and Water Resource Conservation Act of November 18 1977 (16 U.S.C. 2001): This Act directs the Secretary of Agriculture to appraise the Nation's soil and water resources on a continuing basis and to develop and update periodically a program for furthering the conservation, protection, and enhancement of the soil and water resources.

Soil Information Assistance for Community Planning and Resource Development Act of 1966, September 7, 1966 (42 U.S.C. 3271 et seq.): This Act directs the Secretary of Agriculture to provide assistance to States and other public agencies in the classification and interpretation of kinds of soil and in the intensification of use and benefits of the National Cooperative Soil Survey. The Act further provides for consultation with other Federal agencies to assure coordination of work.

Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109): Requires and encourages prevention and reduction of waste streams and other pollution through minimization, process change, and recycling. Encourages and requires development of new technology and markets to meet objectives.

Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.): Requires the consideration of protection and/or reestablishment of fish and wildlife habitat during the design, assessment, and implementation of reclamation plans and during designation of areas unsuitable for mining. It requires application of unsuitability criteria prior to coal leasing and proposed mining operations for minerals or mineral materials other than coal.

Watershed Protection and Flood Control Act of 1954, as amended, August 4, 1954: Under this Act, the Federal Government is directed to cooperate with States and their political subdivisions, soil or water conservation Planning Areas, flood prevention or control Planning Areas, and other local public agencies to prevent erosion or floodwater and sediment damage.

E. O. 11988, Flood plain Management, May 24, 1977 (42 FR 26951): Directs Federal agencies to provide leadership and take action on Federal lands to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of flood plains. Agencies are required to avoid the direct or indirect support of development on flood plains whenever there are practical alternatives and evaluate the potential effects of any proposed action on flood plains.

E.O. 11989, Off-road Vehicles, May 24, 1977 (42 FR 26959): Directs heads of Federal agencies to close areas to off-road vehicle (ORV) use whenever it is determined that use of ORVs is or will cause considerable adverse impact to soil, vegetation, wildlife, wildlife habitat, or certain other resources on the public lands.

- **40 CFR 1500-1508**, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, July 1, 1986.

6.3.2. Policies

Department of Interior and BLM policies are generally encompassed by the Federal laws and regulations listed above and may provide specific guidance for particular issues. In general it is BLM policy to collect and maintain soil resource information consistent with management needs and to develop, test and apply soil interpretations to guide use and management of soils and related resources. (BLM Manual 7100).

6.3.3. MOUs

National Cooperative Soil Survey Memorandum of Understanding (1978)

6.3.4. BLM Manuals and Handbooks

- **BLM Manual 7000:** Soil, Water, and Air Management
- **BLM Manual 7100:** Soil Resource Management
- **BLM Technical Reference 1734-7:**Ecological Site Inventory (2001)
- **BLM Technical Reference 1737-19:** Riparian-Wetland Soils (2003)
- **BLM Manual 6521:** State Agencies

6.4. Water Resources

See section 6.5, Vegetative Communities for additional authorities related to water resources.

6.4.1. Federal laws, regulations, statues and orders

Classification and Multiple-Use Act (78 stat. 986, U.S.C. 1411-18), 43 CFR 1725.3-3(h) as of October 1, 1981: One of the 10 objectives of public land management listed in the Act is "Watershed Protection", which is defined as the protection, regulated use, and development of any public lands in manner to control runoff; to minimize soil erosion, siltation, and other destructive consequences of uncontrolled water flows; and to maintain and improve storage, yield, quality, and quantity of surface and subsurface waters.

Coastal Zone Management Act of 1972 as amended through P.L. 104-150, the Coastal Zone Protection Act of 1996: Sets a national policy to protect, develop, and restore or enhance the Nation's coastal zone. It authorizes the States to take over management of the coastal zone management program. The State of Alaska manages this program through the Department of Governmental Coordination (DGC).

Control of Pollution from Federal Facilities (33 U.S.C. 1323) 1970: Established that Federal agencies shall be subject to all requirements and administrative authorities, processes, and sanctions respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity, including the payment of reasonable service charges.

Emergency Wetlands Resources Act of 1986 (P.L. 99-645): This Act authorized the purchase of wetlands from Land and Water Conservation Fund monies and required the Secretary to establish a National Wetlands Priority Conservation Plan and to continue the national wetlands inventory.

Federal Water Pollution Control Act (Clean Water Act) (33 U. S. C. 1151, 1251, 1254, 1323, 1324, 1329, 1342, 1344) as amended. The Act intends to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Required are: (1) compliance with State and other Federal pollution control rules, (2) no degradation of instream water quality needed to support designated uses, (3) control of nonpoint source water pollution by using conservation or best management practices, (4) Federal agency leadership in controlling nonpoint pollution from managed lands, (5) rigorous criteria for controlling discharge of pollutants into waters of the United States.

Geothermal Steam Act of 1970, as amended (30 U.S.C. 1001): Authorizes the Secretary to issue leases for the development and utilization of geothermal resources on lands administered by the Secretary, including public, withdrawn and acquired lands; National Forests or other lands administered by the USFS, including public, withdrawn and acquired lands; lands conveyed by the U.S. subject to a reservation to the U.S. of geothermal steam and associated geothermal resources. This authority has been delegated to the BLM, given the assurance that the land may continue to be used adequately for the purposes for which it was withdrawn or acquired.

North American Wetlands Conservation Act of 1989 (16 U.S.C. §§ 4401-4413): This Act provides Federal matching funds to public-private partnerships for wetland habitat conservation projects in North America.

Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109): Requires and encourages prevention and reduction of waste streams and other pollution through minimization, process change, and recycling. Encourages and requires development of new technology and markets to meet objectives.

Safe Drinking Water Act 1996 (PL 104-182): The Act provides the states with more resources and authority to enact the Safe Drinking Water Act of 1977 (42 U.S.C. 300f). This amendment directs the states to identify source areas for public water supplies that serve at least 25 people or 15 connections at least 60 days a year.

Safe Drinking Water Act Amendments of 1977 (42 U.S.C. 210): Requires compliance with all Federal, state, or local statutes for safe drinking water.

Safe Drinking Water Act 1996 (PL 104-182): The Act provides the states with more resources and authority to enact the Safe Drinking Water Act of 1977 (42 U.S.C. 300f). This amendment directs the states to identify source areas for public water supplies that serve at least 25 people or 15 connections at least 60 days a year.

Soil and Water Resource Conservation Act of November 18 1977(16 U.S.C. 2001): This Act directs the Secretary of Agriculture to appraise the Nation's soil and water resources on a continuing basis and to develop and update periodically a program for furthering the conservation, protection, and enhancement of the soil and water resources.

Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.): Requires the consideration of protection and/or reestablishment of fish and wildlife habitat during the design, assessment, and implementation of reclamation plans and during designation of areas unsuitable for mining. It requires application of unsuitability criteria prior to coal leasing and proposed mining operations for minerals or mineral materials other than coal.

Water Quality Act of 1987, as amended from the Federal Water Pollution Control Act of 1977 (33 U.S.C. 1271 et seq.): Reauthorizes the Water Pollution Control Act of 1972 and strengthened pollution standards.

Watershed Protection and Flood Control Act of 1954, as amended, August 4, 1954: Under this Act, the Federal Government is directed to cooperate with States and their political subdivisions, soil or water conservation Planning Areas, flood prevention or control Planning Areas, and other local public agencies to prevent erosion or floodwater and sediment damage.

Wild and Scenic Rivers Act of 1968, as amended (16 U.S.C. 1271 et seq.): Provides for the development and management of certain rivers. The purposes for which Wild and Scenic Rivers are added to the National Wild and Scenic Rivers System (National System) are made explicit in section 1(b)—specifically, to protect a river's free-flowing condition, water quality, and outstandingly remarkable values.

E.O. 11644, Use of Off-road Vehicles on Public Lands, February, 8, 1972 (37 FR 2877): Establishes policies and provides procedures for controlling or directing use of off-road vehicles on public lands, with the goal of protecting resources, promoting the safety of all users, and minimizing conflicts among various uses.

E.O. 11738, September 10, 1973: This order directs each Federal agency to enforce the Clean Air Act and the Clean Water Act in the procurement of goods, materials, and services.

E.O. 11752 - December 19, 1973: This order mandates that Federal agencies shall provide national leadership to protect and enhance the quality of air, water, and land resources through compliance with applicable Federal, State, interstate, and local pollution standards. This order directs Federal agencies to design, construct, manage, operate, and maintain its facilities in a manner to protect and enhance environmental quality through cooperation with State and local governments. This order cross-references the need to comply with several environmental acts such as the Clean Air Act, Federal Water Pollution Control Act, Solid Waste Act, Noise Control Act, Insecticide and Pesticide Acts, and NEPA.

E. O. 11988, Flood plain Management, May 24, 1977 (42 FR 26951): Directs Federal agencies to provide leadership and take action on Federal lands to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of flood plains. Agencies are required to avoid the direct or indirect support of development on flood plains whenever there are practical alternatives and evaluate the potential effects of any proposed action on flood plains.

E.O. 11989, Off-road Vehicles, May 24, 1977 (42 FR 26959): Directs heads of Federal agencies to close areas to off-road vehicle (ORV) use whenever it is determined that use of ORVs is or will cause considerable adverse impact to soil, vegetation, wildlife, wildlife habitat, or certain other resources on the public lands.

E. O. 11990, Protection of Wetlands, May 25, 1977 (42 FR 26961): Requires Federal agencies exercising statutory authority over Federal lands to avoid to the extent possible, the long and short-term adverse impacts associated with the destruction or modification of wetlands. It directs Federal agencies to identify, protect, enhance, and manage wetlands on public lands.

6.4.2. Policies

Departmental, Bureau, State Office, and Field Office policies are generally encompassed by the Federal laws and regulations listed above and may provide specific guidance for particular issues. Policies should be consulted for specific issues.

6.4.3. BLM Manuals and Handbooks

- **BLM Manual 7000:** Soil, Water, and Air Management
- **BLM Manual 7200 Series:**
- **BLM Manual 1737:** Riparian and Wetland Management
- **BLM Handbook H-1741-2:** Water Developments
- **BLM Manual 6521:** State Agencies

6.4.4. State Laws and Regulations

Alaska Statute (AS): Water, Air, Energy and Environmental Conservation (Title 46): Environmental Conservation laws for the State of Alaska.

- AS 46.03.710
- AS 46.03.070
- AS 46.03.850(a)-(c)
- AS 46.03.780(a)
- AS 16.10.010(a)(1)

- AS 16.10.010(a)(2),(3)
- AS 41.17.010(5)
- AS 41.17.055(d)
- AS 41.17.060(b)(2)
- AS 41.17.060(b)(5)
- AAC 70.020(b)(9)
- AAC 70.020(b)(12)

6.5. Vegetative Communities

6.5.1. Federal laws, regulations, statues and orders

Coastal Wetlands Planning, Protection, and Restoration Act of 1990 (P.L. 101-646): Expands the administration of Federal grants to acquire, restore, and enhance wetlands of coastal states. This Act provides for a matching grant program to fund wetland conservation projects.

Emergency Wetlands Resources Act of 1986 (P.L. 99-645): Authorized the purchase of wetlands from Land and Water Conservation Fund monies and required the Secretary to establish a National Wetlands Priority Conservation Plan and to continue the national wetlands inventory.

Public Lands Improvement Act of 1978 (43 U.S.C. 1901-1908): Establishes a national policy and commitment to improve the conditions on public rangelands. It provides for the improvement of range conditions to assure that rangelands become as productive as feasible for watershed protection, livestock grazing, wildlife habitat, and other rangeland values. It establishes and reaffirms a policy to maintain an inventory of range conditions and trends and to manage for improvement of the public rangelands so that they become as productive as feasible. This Act establishes a national policy to inventory and identify current public rangelands soil and water conditions and trends and to manage, maintain, and improve the condition of these lands. Range improvement is defined to include providing water, stabilizing soil and water conditions, and providing habitat for wildlife. The Act also requires monitoring to reflect changes in soil and water conditions over time.

North American Wetlands Conservation Act of 1989 (16 USC §§ 4401-4413): This Act provides Federal matching funds to public-private partnerships for wetland habitat conservation projects in North America.

E. O. 11990, Protection of Wetlands, May 25, 1977 (42 FR 26961): Requires Federal agencies exercising statutory authority over Federal lands to avoid to the extent possible, the long and short-term adverse impacts associated with the destruction or modification of wetlands. It directs Federal agencies to identify, protect, enhance, and manage wetlands on public lands.

6.5.2. Policies

BLM's policy is to maintain, restore, or improve riparian-wetland ecosystems to achieve a healthy and proper functioning condition that assures biological diversity, productivity, and sustainability.

6.5.3. BLM Manuals and Handbooks

- **BLM Manual 1737:** Riparian-Wetland Area Management

6.6. Noxious and Invasive Species

6.6.1. Federal laws, regulations, statues and orders

Carlson-Foley Act 1968 (42 U.S.C. 1241-1243): Directs agencies to enter upon lands under their jurisdiction and destroy such noxious plants growing on such lands.

Federal Insecticide, Fungicide, and Rodenticide Act of 1975 (7 U.S.C. 136 et seq.): Establishes an extensive regulatory system for controlling the sale, distribution, and application of pesticides.

Noxious Weed Control Act of October 2004: This act establishes a program to provide assistance to eligible weed-management agencies to noxious weed problems through the Secretary of Agriculture.

Plant Protection Act 2000: Replaces the Federal Noxious Weed Act of 1974. Consolidates and modernizes statutes pertaining to plant protection and quarantine. It permits APHIS to address all types of weed issues and to take emergency action to address incursion of noxious weeds.

E.O. 11987, Exotic Organisms, May 24, 1977 (42 FR 26949): Directs Federal agencies, to the extent permitted by law, to restrict the introduction and/or importation, and funding of exotic species into natural ecosystems on lands they administer. It also encourages State, local governments, and private citizens to prevent introduction of exotic species.

E.O. 31112, Invasive Species, February 3, 1999 (64 FR 27655): Directs Federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause.

6.6.2. Policies

BLM's policy is to prevent the introduction and spread of invasive species. More specific policies are outlined in the manual sections and strategic plans listed below.

6.6.3. NEPA Documents

Record of Decision: Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (September 2007). The Record of Decision for this document allows for the use of four new approved herbicides, provides updated analysis on 17 currently approved herbicides, and identifies those herbicides that the BLM will no longer use on public lands. The decision also guides the use of herbicides for field-level planning and on-the-ground projects designed to restore and sustain important riparian, range, and wildlife habitat on public lands under BLM management. In addition, the decision establishes a protocol for assessing human health and ecological risks of future herbicide use. The Record of Decision does not authorize any specific actions on the ground; site-specific analysis under the NEPA is still required at the project level.

6.6.4. MOUs

Memorandum of Understanding for the Establishment, Endorsement and Support of the Alaska Committee for Noxious and Invasive Plants Management (CNIPM). BLM signed this MOU on September 21, 2000.

6.6.5. BLM Manuals, Handbooks, and Strategic Plans

- **BLM Manual 9011:**Chemical Pest Control
- **BLM Manual 9014:** Use of Biological Control Agents of Pests on Public Lands
- **BLM Manual 9015:** Integrated Weed Management
- **Partners Against Weeds:** An Action Plan for the Bureau of Land Management, January 1996.

6.6.6. State Laws and Regulations

AS 03.05.010 and **AS 44.37** authorize the ADNR, Division of Agriculture to prevent the importation and spread of pests that are injurious to public interest and for the protection of the agricultural industry. Various sections of the Alaska Administrative Code Part 34 address invasive species. For example,**11 AAC 34.075** defines prohibited acts; **11 AAC 34.020** provides a list of prohibited and restricted noxious weeds; **11 AAC 34.400** provides definitions of terms.

6.7. Fish, Wildlife, and Special Status Species

See section 6.4 Water Resources, 6.5 Vegetative Communities, 6.6 Noxious and Invasive Species, and 6.22 Subsistence for additional mandates and authorities pertaining to fish and wildlife.

6.7.1. Federal laws, regulations, statues and orders

Alaska National Interest Lands Conservation Act of 1980 (16 U.S.C. 3101 et seq.): This Act provides for the special designation of certain public lands in Alaska and conservation of their fish and wildlife values; management for subsistence uses of fish and wildlife resources on public lands by residents of rural Alaska; and protection of wildlife resources on North Slope lands impacted by oil and gas exploration and development activities.

Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668d) as amended by the Eagle Protection Act of 1962 (P.L. 870884): Provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds (including their parts, nests, or eggs).

Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.): Provides for the protection of endangered species, threatened species, and their habitats, and requires Federal agencies to ensure that the continued existence of listed species is not jeopardized and that designated critical habitat of listed species is not destroyed or adversely modified. This Act directs Federal agencies to ensure that their actions do not jeopardize threatened and endangered species, and to use their authority to assist in the recovery of these species.

Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911): Authorizes financial and technical assistance to the States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife.

Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661 et seq.): Directs that wildlife conservation be given equal consideration and be coordinated with other features of water-resource development.

Fish and Wildlife Improvement Act of 1978 (16 U.S.C. 7421; 92 Stat. 3110): This Act authorizes the Secretary of the Interior and the Secretary of Commerce to assist in training of state fish and wildlife enforcement personnel; to cooperate with other Federal or State agencies for enforcement of fish and wildlife laws; and to use appropriations to pay for rewards and undercover operations.

Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265) as amended in 1996: This act defines the term Essential Fish Habitat (EFH), and provides guidelines for the description, identification, conservation, and enhancement of EFH. The National Marine Fisheries Service considers all waters listed in the State of Alaska's 'Catalogue of waters important for the spawning, rearing, and migration of anadromous fish' as EFH. This Act calls for direct action to stop or reverse the continued loss of fish habitats and requires Federal agencies to consult with the Secretary of Commerce regarding any activity, or proposed activity, authorized, funded, or undertaken by the agency that may adversely affect EFH.

Migratory Bird Conservation Act of 1929, as amended (16 U.S.C. 715) and treaties pertaining thereto: Establishes Federal responsibility to protect migratory birds and authorizes the Secretary of the Interior to regulate hunting of migratory birds.

Migratory Bird Treaty Act of 1918 as amended (16 U.S.C. 703-712): Implements conventions or treaties between the U.S. and Canada, Japan, Russia and Mexico for the protection of migratory birds. It establishes a Federal prohibition, on take of migratory birds.

North American Wetlands Conservation Act of 1989 (16 USC §§ 4401-4413): This Act provides Federal matching funds to public-private partnerships for wetland habitat conservation projects in North America.

Secretarial Order 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act: Clarifies the responsibilities of the component agencies, bureaus and offices of the Department of the Interior, when actions taken under authority of the ESA and associated implementing regulations affect, or may affect, Indian lands, tribal trust resources, or the exercise of American Indian tribal rights. This Order acknowledges the trust responsibility and treaty obligations of the United States toward Indian tribes and tribal members and its government-to-government relationship in dealing with tribes.

Sikes Act of 1974 as amended (16 U.S.C. 670 et seq.): Provides for the conservation, restoration, and management of wildlife species and their habitats in cooperation with State wildlife agencies, including establishment of a hunting and fishing stamp program with revenues to be spent upon lands on which fees are collected.

Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.): Requires the consideration of protection and/or reestablishment of fish and wildlife habitat during the design, assessment, and implementation of reclamation plans and during designation of areas unsuitable

for mining. It requires application of unsuitability criteria prior to coal leasing and proposed mining operations for minerals or mineral materials other than coal.

Sustainable Fisheries Act (Public Law 104 297) October 11, 1996: This Act amended the habitat provisions of the Magnuson Act. The re-named Magnuson Stevens Fish Conservation Act (16 USC 757a-757g; 79 Stat. 1125) authorizes the Secretaries of the Interior and Commerce to enter into cooperative agreements with the States and other non-Federal interests for conservation, development, and enhancement of anadromous fish and to contribute up to 50 percent as the Federal share of the cost of carrying out such agreements. Authorized are investigations, engineering and biological surveys, research, stream clearance, construction, maintenance, and operations of hatcheries and devices and structures for improving movement, feeding, and spawning conditions. BLM is authorized to conduct studies and make recommendations to EPA concerning measures for eliminating or reducing polluting substances detrimental to fish and wildlife in interstate or navigable waters, or their tributaries.

E.O. 11987, Exotic Organisms, May 24, 1977 (42 FR 26949): Directs Federal agencies, to the extent permitted by law, to restrict the introduction and/or importation, and funding of exotic species into natural ecosystems on lands they administer. It also encourages State, local governments, and private citizens to prevent introduction of exotic species.

E.O. 11990, Protection of Wetlands,

E.O. 12962, Recreational Fisheries, June 7, 1995 (60 FR 30769): Directs all Federal agencies to enhance recreational fish species and provide increased recreational fishing opportunities.

E.O. 31112, Invasive Species, February 3, 1999 (64 FR 27655): Directs Federal agencies to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause.

E.O. 13186, Migratory Birds, January 10, 2001 (66 FR 3853): Directs agencies within the Executive Branch to take certain actions to further implement the Migratory Bird Treaty Act (MTBA), with the goal of promoting the conservation of migratory bird populations.

E.O. 13443, Facilitation of Hunting Heritage and Wildlife Conservation, August 16, 2007 (66 FR): The purpose of this order is to direct Federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

36 CFR 242 and 50 CFR 100, Subsistence Management Regulations for Public Lands in Alaska: Implements the Federal Subsistence Management Program on public lands within the State of Alaska, pursuant to Title VIII of ANILCA.

43 CFR 24, Department of the Interior Fish and Wildlife Policy: State-Federal Relationships: Clarifies and supports the authorities and responsibilities of Federal and State agencies responsible for the management of the nation's fish and wildlife and promotes cooperative agency management relationships which advance scientifically-based resource management programs. This policy is intended to reaffirm the basic role of the States in fish and resident wildlife management and to foster improved conservation of fish and wildlife.

50 CFR 17, Endangered and Threatened Wildlife and Plants: Implements the Endangered Species Act of 1973, and identifies species of wildlife and plants determined to be endangered or threatened with extinction.

50 CFR 600.905, Magnuson-Stevens Act Provisions, Purpose, scope, and NMFS/Regional Fishery Management Council cooperation: Addresses the coordination, consultation, and recommendation requirements of sections 305(b)(1)(D) and 305(b)(2–4) of the Magnuson-Stevens Act. The purpose of these procedures is to promote the protection of Essential Fish Habitat (EFH) in the review of Federal and State actions that may adversely affect EFH.

6.7.2. Policies

It is BLM policy to manage habitat with an emphasis on ecosystems to ensure self-sustaining populations and a natural abundance and diversity of wildlife, fish, and plant resources on public land (BLM Manual 6500). It is the policy of the BLM to conserve listed species and the ecosystems upon which they depend; to use the BLM's existing authority in furtherance of the purposes of the ESA; to ensure that all actions authorized, funded, or carried out by the BLM are in compliance with the ESA; to cooperate with the U.S. Fish and Wildlife Service and National Marine Fisheries Service in planning and providing for the recovery of listed species; to retain in Federal ownership all habitat essential for the survival and recovery of any listed species, including habitat that was used historically, that has retained its potential to sustain listed species, and is deemed to be essential to their survival (BLM Manual 6840). Additionally, consistent with existing laws, the BLM shall implement management plans that conserve candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for these species to become listed (BLM Manual 6840).

Instruction Memorandum 2008-050, Migratory Bird Treaty Act—Interim Management Guidance: Provides interim guidance to enhance coordination and communication toward meeting BLM's responsibilities under the Migratory Bird Treaty Act and the Executive Order 13186, and is considered a primary agency effort to minimize unintentional take of migratory birds and optimize migratory bird management related to BLM activities.

Instruction Memorandum AK-2006-046, Predator Control by the State of Alaska:"Unless control activities conflict with on-going or anticipated BLM authorized actions, land use plan decisions for a given area, or a threat to the public safety exists from the performance of those activities, the BLM's position on the State's predator control program will be as follows: 1. Predator control is a State function. 2. The BLM neither supports nor condemns predator control methods approved by the Board of Game. "

6.7.3. MOUs

Master Memorandum of Understanding between Alaska Department of Fish and Game and the BLM: Parties agree to cooperate in the management of fish and wildlife resources and habitat on BLM lands in such a way as to conserve and enhance fish and wildlife populations.

6.7.4. BLM Manuals and Handbooks

- **BLM Manual 1745:** Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants

- **BLM Manual 6500:** Wildlife and Fisheries Management
- **BLM Manual 6521:** Cooperative Relations
- **BLM Manual 6523:** Nongovernmental Organizations
- **BLM Manual 6524:** Research
- **BLM Manual 6525:** Sikes Act Wildlife Programs
- **BLM Manual 6600:** Fish, Wildlife and Special Status Plants Inventory and Monitoring
- **BLM Manual 6720:** Aquatic Resources Management
- **BLM Manual 6780:** Habitat Management Plans
- **BLM Manual 6840:** Special Status Species Policy

6.7.5. State Laws and Regulations

AS 41.14.840: Requires construction and maintenance of a fishway and a device for downstream passage of migrants for any obstruction built across a stream frequented by anadromous or resident fish species. Plans and specifications are subject to review and approval by the Alaska Department of Natural Resources.

AS 41.14.870: Requires the Alaska Department of Natural Resources to specify the rivers, lakes, and streams that are important for the spawning, rearing, or migration of anadromous fish. In addition, anyone wanting to construct a hydraulic project, or use, divert, obstruct, pollute, or change the natural flow or bed of a specified water body, or operate a vehicle in these water bodies, is required to contact ADNR for written approval before beginning the activity.

Alaska State Regulation 5 AAC 39.222: Policy for the Management of Sustainable Salmon Fisheries requires that the State manage salmon fisheries such that salmon stocks and habitat are maintained at levels of resource productivity that assure sustained yields.

Alaska State Regulation 11 AAC 195.010: The Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes is the means by which the Alaska Department of Natural Resources specifies water bodies that are important for the spawning, rearing, or migration of anadromous fish.

6.8. Wildland Fire Ecology and Management

6.8.1. Federal laws, regulations, statues and orders

Wildfire Suppression Assistance Act of 1989 (P.L. 100-428, as amended by P.L. 101-11, April 7, 1989)

Reciprocal Fire Protection Act of May 27, 1955, as amended (42 U.S.C. 1856): Authorizes agencies that provide fire protection for any property of the U.S. to enter into reciprocal agreements with other fire organizations to provide mutual aid for fire protection.

Healthy Forests Restoration Act of 2003: Provides direction for the fuels management program.

Federal Fire Prevention and Control Act of October 29, 1974 (88 Stat. 1535; 15 U.S.C. 1601): Established the United States Fire Administration and its National Fire Academy to improve safety.

6.8.2. Policies

BLM fire policies are outlined in the following documents. Additional policy may be found in the BLM Manual sections listed below.

- **1995 Federal Wildland Fire Management Policy and Program Review, U. S. Departments of Interior and Agriculture:** National fire policy document.
- **Review and Update of the 1995 Federal Wildland Fire Management Policy, January 2001, U. S. Departments of Interior and Agriculture:** Update of National fire policy.

6.8.3. NEPA Documents

Alaska Land Use Plan Amendment for Wildland Fire and Fuels Management Environmental Assessment and FONSI and Decision Record (BLM 2005): Amended all land use plans in Alaska for wildland fire and fuels management.

Alaska Interagency Wildland Fire Management Plan 1998 (AIWFMP): Fire management plan that consolidates the thirteen original fire plans into one document. It covers the entire state of Alaska.

Alaska Interagency Fire Management Plan, Tanana/Minchumina Planning Area 1982 and Amendment 1984, Alaska Interagency Fire Management Plan, Fortymile Planning Area 1984; Alaska Interagency Fire Management Plan, Upper Yukon Tanana Planning Area 1984 and Alaska Interagency Fire Management Plan, Copper Basin Planning Area 1983: Four geographic fire management plans that cover the Eastern Interior planning area.

Bureau of Land Management-Alaska Wildland Fire Management Plan 2005: Updates BLM Alaska fire management direction.

6.8.4. BLM Manuals and Handbooks

- **Department of Interior Manual 620, April 1998:** Gives fire policy direction for fire, with a chapter specific to Alaska.
- **BLM Manual 9200, various release dates:** BLM fire policy direction.

6.9. Cultural Resources

6.9.1. Federal laws, regulations, statues and orders

Antiquities Act of 1906 (16 USC 431 et seq.): Protects cultural resources on Federal lands and imposes penalties for excavation or appropriation without a permit.

Historic Sites Act of 1935 (16 USC 461-467): Declares national policy to identify and preserve historic sites, buildings, objects, and antiquities of national significance, providing a foundation for the National Register of Historic Places.

National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.): Established the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officer (SHPO), and mandates their role in the oversight of Federal undertakings. Section 106

of the Act requires Federal agencies to provide the SHPO and/or the ACHP an opportunity to comment on any undertakings that might affect historic properties. Other important provisions of the Act require Federal agencies to inventory their lands and to consult and cooperate with other managers and interested publics.

National Environmental Policy Act of 1969 (42 USC 4321 et seq.): Establishes a national policy to "… preserve important historic, cultural, and natural aspects of our national heritage…."

E.O. 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971 (36 CFR 8921): Directs Federal agencies to locate, inventory, nominate, and protect federally-owned cultural resources eligible for the National Register of Historic Places, and ensure that their plans and programs contribute to the preservation and enhancement of non- federally-owned resources.

Archaeological and Historic Preservation Act of 1974, which amends the Reservoir Salvage Act of 1960 (P.L. 86-523; P.L. 93-291; 16 USC 469 et seq.): Directed all Federal agencies, in regards to all manner of projects, to take into account their impacts on archaeological, historical, and scientific data, and provide funding if necessary to recover such data.

Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.): Establishes a national policy that "... the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values…."

American Indian Religious Freedom Act of 1978 (42 USC 1996) and E.O. 13007 Indian Sacred Sites (1996): Declares the United States policy of protecting and preserving the inherent right of freedom to believe, express, and exercise traditional religions; including access to religious sites, use and possession of sacred objects, and freedom to worship through ceremonials and traditional rites; for the American Indian, Eskimo, Aleut, and Native Hawaiian.

Archeological Resources Protection Act of 1979, as amended (PL 96-95; 16 USC 470aa-mm): Establishes the authority to require permits to excavate or collect archaeological resources from the public lands, and provides serious penalties for those convicted of violating the Act.

Native American Graves Protection and Repatriation Act of 1990 (25 USC 1241-1249): Requires the repatriation of American Native human remains, funerary objects, and objects of cultural patrimony that are housed in museum collections controlled by Federal agencies or in museums that have accepted Federal funds. It also contains provisions that apply to the future excavation of such materials.

Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79), 1990: These Federal regulations, as required by NHPA, the Reservoir Salvage Act, and ARPA, provide minimum standards for the long-term management and care of new and existing archeological collections, including the associated records and reports. The regulations acknowledgement that curation involves real costs to the owners of collections, and that it is the responsibility of the Federal agency that manages or managed the land on which a collection was recovered to fund its long-term care.

E.O. 13287, Preserve America, March 3, 2003: Supports efforts to preserve, maintain and use the nation's federally-owned historic properties by promoting community economic development, particularly heritage tourism, through local private-federal partnerships.

6.9.2. MOUs and Agreements

National Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers (1997): The BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers signed a nationwide agreement in March 1997 with the purpose of simplifying and streamlining the process for compliance with Section 106 of the National Historic Preservation Act. One of the major driving forces behind development of the agreement was the expectation that by simplifying compliance, BLM cultural resource personnel and funds could be freed up to accomplish more proactive management. Under the programmatic agreement, each BLM state was to work with the local SHPO to develop a protocol setting out the specifics of the compliance process.

Alaska protocol (1998): In April 1998, the State Director and the Alaska State Historic Preservation Officer (SHPO) signed the Alaska protocol, which was called for in the National Programmatic Agreement. The protocol provides for the discretionary involvement of the SHPO in a wide range of BLM activities, including planning and fieldwork. BLM Alaska is free under the protocol to determine what type of inventory is appropriate for undertakings without consulting with the SHPO, and may avoid case-by-case review except for certain specified circumstances or where BLM has determined that there is a probability of cultural resources being impacted. The BLM is required to submit copies of all reviews of cultural resources annually for SHPO review.

Programmatic Agreement regarding Congressionally-Authorized Land Transfers to the State of Alaska (2002): The Programmatic Agreement, signed by the BLM State Office, Alaska Department of Natural Resources, Alaska State Historic Preservation Officer, and the Advisory Council on Historic Preservation in September 2002, and its accompanying Instruction Memorandum No. AK-2004-005, establishes and provides instruction to BLM employees on how to handle the transfer of lands from Federal to state jurisdiction in lieu of complying with Section 106 of the National Historic Preservation Act.

6.9.3. BLM Manuals and Handbooks

The BLM cultural resource program is laid out in the 8100 section of the Bureau manual (various release dates). Various sections establish appropriate levels of inventory, procedures for evaluating sites, protection of sites, issuance of permits under the Archaeological Resources Protection Act of 1979, and other aspects of the program.

- **BLM Manual 8100:** The Foundation For Managing Cultural Resources
- **BLM Manual 8110:** Identifying and Evaluating Cultural Resources
- **BLM Manual 8120:** Tribal Consultation Under Cultural Resources
- **BLM Manual 8130:** Planning For Uses Of Cultural Resources
- **BLM Manual 8140:** Protecting Cultural Resources
- **BLM Manual 8150:** Permitting Uses Of Cultural Resources
- **BLM Manual 8170:** Interpreting Cultural Resources For The Public

6.9.4. State Laws and Regulations

AS 41.35.200: Which applies only to State lands, makes the disturbance of historic and prehistoric sites a class A misdemeanor.

AS 11.46.482(a)(6): Which applies to all lands in Alaska, makes the intentional disturbance of a grave site and the intentional destruction and unauthorized removal of any human remains from a site a class C felony.

AS 12.65.5: Which applies to all lands in Alaska, requires, in part, the immediate notification of a peace office of the state and the State Medical Examiner of the discovery of any human body or its remains when death has been caused by unknown or criminal means. The Alaskan State Troopers interprets this statute to include all human remains, regardless of age. The State Troopers or State Medical Examiner may defer to the opinions of the field archaeologist on scene if ancient remains (>100 years) are found, and may initiate no further investigation.

6.10. Paleontological Resources

6.10.1. Federal laws, regulations, statues and orders

While there are no laws specifically aimed at the management of paleontological resources, a number of laws address paleontology at least partially, and the BLM utilizes such general laws and authorities to protect paleontological resources. These include:

Archeological Resources Protection Act of 1979, as amended (PL 96-95; 16 USC 470ee): Prohibits the unauthorized removal of fossils that are in an archaeological context

Damage to Government Property (18 U.S.C. 1361): Fossils on Federal lands have been interpreted as a type of Government property, and their unauthorized disturbance resulting in damage is regarded as damage of Government property.

Federal Cave Resources Protection Act of 1988 (P.L. 100-691) and Title 43 CFR Subpart 37: Address protection of significant caves and cave resources, including paleontological resources.

Federal Land Policy and Management Act of 1976 (P.L. 94-579; 43 U.S.C. 1701 et seq.): The Act requires that the public lands be managed in a manner that protects the "… quality of scientific …" and other values, which has been interpreted to include paleontological resources. The Act also requires the public lands to be inventoried and provides that permits may be required for the use, occupancy and development of the public lands.

National Environmental Policy Act of 1969 (PL 91-190; 42 USC 4321 et seq.): The Act establishes a national policy to "… preserve important historic, cultural, and natural aspects of our national heritage…." which has been interpreted to include paleontological resources. The Act also indicates that "…a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences … in planning and decision making…" be followed.

Onshore Oil and Gas Order No. 1 and 43 CFR Title 3162: Provide for the protection of natural resources and other environmental concerns and can be used to protect paleontological resources where appropriate.

Offer to Lease and Lease for Oil and Gas Form 3100-11: Provides for inventories and other short term studies to protect objects of scientific interest, such as significant fossil occurrences, and requires that operations conducted under oil and gas leases minimize adverse impacts to natural and cultural resources.

Theft of Government Property (18 U.S.C. 641): Fossils on Federal lands have been interpreted as a type of Government property, and their unauthorized collection is regarded as theft of Government property.

Secretarial Order 3104: Grants to BLM the authority to issue paleontological resource use permits for lands under its jurisdiction.

- **36 CFR, Subpart 62:** Addresses procedures to identify, designate and recognize National Natural Landmarks, which include fossil areas.
- **43 CFR 3622:** Addresses the free use collection of petrified wood as a mineral material for non-commercial purposes.
- **43 CFR 3621:** Addresses collection of petrified wood for specimens exceeding 250 pounds in weight.
- **43 CFR 3610:** Addresses the sale of petrified wood as a mineral material for commercial purposes.
- **43 CFR, Subparts 3802 and 3809:** Address protection of paleontological resources from operations authorized under the mining laws.
- **43 CFR 8200:** Addresses procedures and practices for the management of lands that have outstanding natural history values, such as fossils, which are of scientific interest.
- **43 CFR 1610.7-2:** Addresses the establishment of Areas of Critical Environmental Concern for the management and protection of significant natural resources, such as paleontological localities.
- **43 CFR 8364:** Addresses the use of closure or restriction of public lands to protect resources. Such closures or restrictions may be used to protect important fossil localities.
- **43 CFR 8365.1-5:** Addresses the willful disturbance, removal and destruction of scientific resources or natural objects and 8360.0-7 identifies the penalties for such violations.

6.10.2. Policies

The BLM recognizes paleontological resources as constituting a fragile and nonrenewable scientific record of the history of life on earth, thus representing an important and critical component of America's natural heritage. BLM will exercise stewardship of these resources as a part of its public land management responsibility (BLM Manual 8270).

6.10.3. BLM Manuals and Handbooks

The BLM paleontological resource program is laid out in the 8270 section of the Bureau manual. Various sections discuss land-use planning and environmental review, assessment and mitigation, proactive management, and issuance of permits.

- **BLM Manual 8270:**, Paleontological Resource Management
- **Handbook H-8270-1:** General Procedural Guidance for Paleontological Resource Management.

6.10.4. State Laws and Regulations

AS 41.35.200: Which applies only to State lands, makes the disturbance of "historic, prehistoric, or archeological resources" a class A misdemeanor. According to AS 41.35.230, "'historic, prehistoric, and archeological resources' includes deposits, structures, ruins, sites, buildings,

graves, artifacts, fossils, or other objects of antiquity which provide information pertaining to the historical or prehistorical culture of people in the state as well as to the natural history of the state."

6.11. Visual Resources

6.11.1. Federal laws, regulations, statues and orders

FLPMA, NEPA, and the Surface Mining Control and Reclamation Act of 1977 (see section 6.15) are the primary Federal laws providing authority for visual resource management.

6.11.2. Policies

The BLM has a basic stewardship responsibility to identify and protect visual values on public lands (BLM Manual 8400).

6.11.3. BLM Manuals and Handbooks

- **BLM Manual 8400:** Visual Resource Management
- **BLM Manual 8431:** Visual Resource Contrast Rating
- **BLM Handbook H-8410-1:** Visual Resource Inventory

6.12. Cave and Karst Resources

6.12.1. Federal laws, regulations, statues and orders

Cave and Karst Research Institute Act of 1998, P. L. 105-325 (16 U.S.C. Sec. 4310): This Act directed the National Park Service to establish the National Cave and Karst Research Institute in Carlsbad, New Mexico. The institute's legislative purposes are to: Further the science of speleology; Centralize and standardize speleological information; Foster interdisciplinary cooperation in cave and karst research programs; Promote public education; Promote national and international cooperation in protecting the environment for the benefit of cave and karst landforms; and Promote and develop environmentally sound and sustainable resource management practices.

Federal Cave Resource Protection Act of 1988 (16 U.S.C. 4301): Provides for protection of caves on lands under the jurisdiction of the Secretary of Interior and Secretary of Agriculture. Establishes terms and conditions for use permits, and penalties for violations.

- **43 CFR Part 37 Cave Management:** This part provides the basis for identifying and managing significant caves on Federal lands.

6.12.2. Policies

It is the policy of the Secretary of Interior that Federal lands be managed in a manner that, to the extent practical, protects and maintains significant caves and cave resources. The type and degree of protection will be determined through the resource management planning process and with public participation (43 CFR 37.2).

BLM 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 the use by the public, both now and in the future. Cave and karst resources will be identified and inventoried to provide information for land use and resource planning processes. The inventory will be monitored and maintained (BLM Manual 8380).

6.12.3. MOUs and Cooperative Agreements

BLM MOU W0-250-2007-01: The BLM maintains a national level MOU with the National Speleological Society and the Cave Research Foundation. Cooperative agreements may be developed at the State and local level to clarify how these cooperators work with the BLM. There are no cooperative agreements in place in Alaska.

Interagency Agreement for Collaboration and Coordination in Cave And Karst Resources Management (2003): The BLM cooperates with other Federal agencies via a national level Interagency Agreement between the BLM, the U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Geological Survey, and National Park Service.

6.12.4. BLM Manuals and Handbooks

BLM Manual 8380: Cave Resources Management (2008).

6.13. Forestry and Woodland Products

6.13.1. Federal laws, regulations, statues and orders

Act of May 14, 1898 Section 11: allows eligible applicants the opportunity to harvest free use timber in Alaska. 16 U.S.C. 615a amends this Act to allow the sale of small sales of timber in Alaska.

Protection Act of September 20, 1922 (16 U.S.C. 594): Authorizes the Secretary of the Interior to protect and preserve timber owned by the United States on public lands under the jurisdiction of the Department of Interior.

Dept. of Interior Appropriations Act of 1976 (PL 94-165): Prohibits the sale of unprocessed timber on Federal lands west of the 100th meridian.

- **43 CFR 5400:** Sales of Forest Products, General
- **43 CFR 5500:** Nonsale Disposals, General
- **43 CFR 5510:** Free Use of Timber

6.13.2. Policies

Specific policies regarding forest management and forest product sales may be found in the Manual sections listed below.

6.13.3. MOUs

The Establishment of a Reciprocal Commercial Mushroom Permit Program; between BLM, Northern Field Office and State of Alaska DNR/Northern Regions. This MOU was established after the 2004 fire season to address an anticipated high level of commercial mushroom harvest and provide coordination on permit sales between the two agencies.

6.13.4. BLM Manuals and Handbooks

- **BLM Manual 5000:**Forest Management
- **BLM Manual 5400:** Sales of Forest Products
- **BLM Handbook H-5400-1, Timber Sale Procedure Handbook:** Contains basic authorities and policies for the sale of forest products from BLM administered lands.

6.13.5. State Laws and Regulations

Alaska State regulations (11 AAC 95.185 - 11 AAC 95.255) describe specific forest management harvest practices required by Alaska State law.

6.14. Livestock Grazing

The BLM removed the grazing regulations under 43 CFR Part 4200, which implemented the livestock grazing program on BLM lands in Alaska, in October 1998 because they were considered obsolete (Federal Register 1998). There are currently no grazing permit holders under BLM's livestock grazing program in Alaska. BLM does not anticipate receiving new applications. The amount of BLM lands suitable for livestock grazing has decreased dramatically because of conveyance of land to Native corporations and the State of Alaska.

6.14.1. Federal laws, regulations, statues and orders

Alaska Livestock Grazing Act of March 1927 (43 U.S.C. 316, 316a-316o): This act allows the government to lease the grazing privileges on the grazing districts established in Alaska to qualified applicants.

E.O. 12548, Grazing Fees, February 11, 1986 (51 FR 5985): Provides for establishment of appropriate fees for the grazing of domestic livestock on public rangelands.

- **43 CFR Part 4200-1:** Authority for grazing privileges. The BLM is authorized under the Alaska Livestock Grazing Act (Act of March 4, 1927, 43 U.S.C. 316, 316a-316o) to lease to qualified applicants the grazing privileges on the grazing districts established in Alaska.

6.15. Minerals

This section is split into three parts: Leaseable Minerals, Locatable Minerals, and Mineral Materials. The laws listed below generally apply to all three categories of minerals.

Mining and Minerals Policy Act of 1970 (30 U.S.C. 21a) (30 U.S.C. 1601 et seq.): Establishes policy of fostering development of economically stable mining and minerals industries, their orderly and economic development, and studying methods for disposal of waste and reclamation.

Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.): Requires the consideration of protection and/or reestablishment of fish and wildlife habitat during the design, assessment, and implementation of reclamation plans and during designation of areas unsuitable for mining. It requires application of unsuitability criteria prior to coal leasing and proposed mining operations for minerals or mineral materials other than coal.

6.15.1. Leasable Minerals

6.15.1.1. Federal laws, regulations, statues and orders

Mineral Leasing Act of 1920 as amended (30 U.S.C. 181 et seq.): Provides for leasing of coal, phosphate, sodium, potassium, oil, gas, oil shale, native asphalt, solid and semi-solid bitumen, bituminous rock, and gilsonite on lands owned by the United States.

Mineral Leasing Act for Acquired Lands of 1947 (30 U.S.C. 351-359): Provides for leasing of coal, phosphate, sodium, potassium, oil, gas, oil shale, and sulfur on lands owned or acquired by the United States.

Geothermal Steam Act of 1970, as amended (30 U.S.C. 1001): Authorizes the Secretary to issue leases for the development and utilization of geothermal resources on lands administered by the Secretary, including public, withdrawn and acquired lands; lands conveyed by the U.S. subject to a reservation to the U.S. of geothermal steam and associated geothermal resources. This authority has been delegated to the BLM, given the assurance that the land may continue to be used adequately for the purposes for which it was withdrawn or acquired.

Federal Coal Leasing Amendments Act of 1976: This Act requires that all public lands available for coal leasing be leased competitively. With two exceptions: (1) preference right lease applications where a lease may be issued on a noncompetitive basis to owners of pre-FCLAA prospecting permits; and (2) modifications of existing leases where contiguous lands of less than 160 acres are added non-competitively to an existing lease.

Federal Oil and Gas Royalty Management Act of 1982 (30 U.S.C. 1701): This Act authorizes the Secretary of the Interior to implement and maintain a royalty management system for oil and gas leases on Federal lands, Indian lands, and the Outer Continental Shelf. It includes the development of enforcement practices that ensure the prompt and proper collection and disbursement of oil and gas revenues owed to the U.S. and Indian lessors, and those inuring to the benefit of States.

Federal Onshore Oil and Gas Leasing Reform Act of 1987 (30 U.S.C. 226, et seq.): Establishes a new oil and gas leasing system, and changes certain operational procedures for onshore Federal lands. It requires the BLM to offer all lands available for leasing competitively prior to leasing noncompetitively and adds environmental provisions to the leasing process. The Act also provides for inspections and enforcement of operations once commenced.

Oil Pollution Act of 1990 (33 U.S.C. §2701 et seq.): This Act mandates extensive planning for oil spills from tank vessels and onshore and offshore facilities. It establishes comprehensive elements of damage for oil spills, and disposes strict liability on those responsible for oil spills.

Energy Policy Act of 1992: Among other things, this Act authorizes issuance of both competitive and noncompetitive leases for a 10-year period. Both types of leases continue for as long thereafter as oil or gas is produced in paying quantities.

Alaska Land Status Technical Corrections Act of 1992: This Act amends Section 905 of ANILCA; It reserves to the U.S. all interests in oil, gas, and coal in the conveyed lands, and the right of the U.S., of lessee or assignee of the U.S., to enter on lands conveyed to the applicant or to the heirs of the applicant, to drill, explore, mine, produce, and remove the oil, gas, or coal.

Energy Policy Act of 2005 (P.L 109-58, 42 USC 15801): This Act encourages energy efficiency and conservation, promotes alternative and renewable energy sources, reduces our dependence on foreign sources of energy, increase domestic production, modernizes the electricity grid, and encourages the expansion of nuclear energy.

- **43 CFR 2880:**Rights-of-Way under the Mineral Leasing Act
- **43 CFR 3000:** Minerals Management
- **43 CFR 3100:**Oil and Gas Leasing
- **43 CFR 3150:**Onshore Oil and Gas Geophysical Exploration
- **43 CFR 3160:**Onshore Oil and Gas Operations
- **43 CFR 3200:**Geothermal Resource Leasing
- **43 CFR 3400:**Coal Leasing

6.15.1.2. Policies

Maintain opportunities for mineral exploration and development while maintaining other resource values. Ensure that oil and gas operations on Federal are conducted in accordance with all applicable regulations, Onshore Orders, Notices to Lessees and permit conditions of approval.

6.15.1.3. BLM Manuals and Handbooks

- **BLM Manual 2880:**Oil and Gas Pipelines
- **BLM Manual 3107:**Continuation, Extension or Renewal
- **BLM Manual 3150:**Onshore Oil and Gas Geophysical Exploration Surface Management Requirements

6.15.2. Locatable Minerals

6.15.2.1. Federal laws, regulations, statues and orders

General Mining Law of 1872, as amended (30 U.S.C. 22 et seq.): Provides for the locating and patenting of mining claims for locatable minerals on public lands in specified states. This Act established few details on how to regulate mining on the public lands. Therefore, rules and regulations have been developed largely in response to extensive mineral case law established through Interior Board of Land Appeals and the courts.

- **43 CFR 3809 (Surface Management):** Prevent unnecessary and undue degradation of the public lands by operations authorized by the mining laws.

6.15.2.2. Policies

Encourage the domestic mining industry to explore, develop, and extract minerals from the public lands, and reserved Federal mineral estates, while regulating such uses to ensure that the public lands are not subject to unnecessary or undue degradation from such activities. Ensure that the public lands, and Federal interests in reserved mineral estates, are not misused or abused by parties that use the General Mining Laws for purposes over than what is permissible under the General Mining Laws or FLPMA (BLM Manual 3800).

6.15.2.3. BLM Manuals and Handbooks

BLM Manual series 3800 (various release dates) provides guidance and policy for management of locatable minerals.

- **BLM Manual 3800:** Mining Claims Under the General Mining Laws
- **BLM Manual 3830:**Location, Recording and Maintenance of Mining Claims, Mill and Tunnel Sites
- **BLM Manual 3833:**Recordation of Mining Claims
- **BLM Manual 3860:**Mineral Patent Applications
- **BLM Manual 3861:**Surveys and Plats
- **BLM Manual 3862:**Lode Mining Patent Applications
- **BLM Manual 3863:**Placer Mining Claim Patent Applications
- **BLM Manual 3864:**Mill Site Claim Patent Applications
- **BLM Manual 3870:**Adverse Claims, Protests, Contests, and Appeals
- **BLM Manual 3890:**Mineral Investigations

6.15.3. Salable Minerals

6.15.3.1. Federal laws, regulations, statues and orders

Act of July 23, 1955; 69 Stat. 934: Removed common varieties of sand, gravel, cinders, pumice, pumiced and clay from the category of locatable minerals and placed them under the Materials Act of 1947, establishing them as salable minerals. The Act also provides for multiple use of the lands and surface resources on mining claims (primarily affected public access across mining claims and the use and development of timber resources on mining claims).

Alaska Native Allotment Act of 1906, (43 U.S.C. 270-273, 34 Stat. 197, as amended by 70 Stat. 954).

Alaska Native Claims Settlement Act of 1971, (43 U.S.C. 1601).

Materials Act of 1947, as amended (61 Stat. 681, 30 U.S.C. 601-604 et seq.) as amended: Provides for the sale of common variety materials (sand, stone, gravel and common clay) for personal, commercial, or industrial uses.

- **43 CFR 3600:** Mineral Materials Disposal
- **43 CFR 3710:** Public Law 167; Act of July 23, 1955
- **43 CFR 3814:** Disposal of Reserved Minerals Under the Stockraising Homestead Act

6.15.3.2. Policies

BLM policy is to dispose of mineral materials, provided adequate measures are taken to protect the environment and that damage to public health and safety is minimized. Since disposal of mineral materials is discretionary, no disposals will be made if it is determined by the Authorized Officer that the total damage to public lands and resources would exceed the expected public benefits derived from any proposed disposal (BLM Manual 3600).

6.15.3.3. BLM Manuals and Handbooks

Manual section 3600 Mineral Materials Disposal (2002) provides the policies, procedures, and references for processing the disposal, exploration, development, and mining of mineral materials, and reclamation of lands disturbed by such activities.

6.16. Recreation

6.16.1. Federal laws, regulations, statues and orders

Alaska National Interest Lands Conservation Act of 1980 (16 U.S.C. 3101 et. seq.): - Section 1312(a): States that the White Mountains NRA shall be administered by the Secretary in order to provide for public outdoor recreation use and enjoyment, and for the conservation of the scenic, scientific, historic, fish and wildlife and other values contributing to public enjoyment of such area.

Americans with Disabilities Act Accessibility Guidelines: Sets guidelines for accessibility to places of public accommodation and commercial facilities by individuals with disabilities.

Architectural Barriers Act (ABA) of 1968 (42 U.S.C. 4151 et seq.): Requires access to facilities designed, built, altered, or leased with Federal funds.

Department of Interior and Related Agencies Appropriations Act, 1996 (P.L. 104-134): Directs the Secretary of the Interior, acting through the BLM, to develop and implement a pilot recreation fee demonstration program to determine the feasibility of cost recovery for operation and maintenance of recreation areas and sites.

Intermodal Surface Transportation Efficiency Act of 1991.

Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 460 et seq.)

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users (SAFETEA-LU) of 2005 (P.L. 109-59): Provides funding for recreational trails.

The Transportation Equity Act for the 21st Century (TEA-21) of 1998 (Public Law 105-178): Provides funding for recreational trails.

Wild and Scenic Rivers Act of 1968, as amended (16 U.S.C. 1271 et seq.)

E.O. 11200: Providing for Establishing User Fees Pursuant to the Land and Water Conservation Act of 1965, February 26, 1965 (30 FR 2645)

E.O. 11644: Use of Off-road Vehicles on Public Lands, February, 8, 1972 (37 FR 2877).

E.O. 11989: Off-road Vehicles, May 24, 1977 (42 FR 26959).

E.O. 13195: Trails for America, January 18, 2001 (66 FR 7391).

6.16.2. Policies

It is BLM policy to ensure the continued availability of Public Lands and related waters for a diversity of resource-dependent outdoor recreation opportunities while maintaining its commitment to managing the Public Lands as a national resource in harmony with the principle of balanced multiple use (BLM Manual 8300).

It is BLM policy that a complete and up-to-date inventory of recreation values, uses, and opportunities be maintained for input into, and monitoring of, resource management plans, recreation area management plans, recreation project plans, environmental assessments and impact statements, operational plans, recreation information management system, and annual statistical reports. The level and detail of the inventory will depend on the complexity and importance of the recreation issues (BLM Manual 8310).

It is BLM policy to plan for outdoor recreation in response to the issues, concerns, and problems identified in the resource management planning (RMP) process. In this context, the Bureau identifies and evaluates public recreation needs and recreation resources on the public lands to determine the allocation of resource for recreation and the extent of required services and management (BLM Manual 8320).

It is BLM policy that proposed recreation projects are identified in, and derived from, approved Recreation Area management Plans and fulfill identified management objectives for specific areas (BLM Manual 8323).

6.16.3. MOUs

Letter of Agreement between The State of Alaska Department of Transportation and Public Facilities (DOT) and The United States Department of the Interior Bureau of Land Management (BLM)-Alaska for Construction and Maintenance of the U.S. Creek Wayside on the Steese Highway: The purpose of this agreement is to rehabilitate the existing interpretive site, improve winter parking, and enhance access into the White Mountains NRA for the public.

6.16.4. BLM Handbooks and Manuals

- **BLM Handbook H-2930-1:** Recreation Permit Administration
- **BLM Handbook H-8410-1:** Visual Resource Inventory
- **BLM Handbook H-8431-1:** Visual Resource Contrast Rating
- **BLM Manual 2930:** Recreation Permits and Fees
- **BLM Manual 8300 Series:** Recreation Management
- **BLM Manual 8310:** Recreation Inventory
- **BLM Manual 8320:** Planning for Recreation Resources
- **BLM Manual 8322:** Recreation Area Management Plans
- **BLM Manual 8323:** Recreation Project Planning
- **BLM Manual 8351:** Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, and Management

- **BLM Manual 8360:** Visitor Services
- **BLM Manual 8362:** Interpretive Services
- **BLM Manual 8400 Series:** Visual Resource Management
- **BLM Manual 8410:** Visual Resource Inventory
- **BLM Manual 8430:** Application of Visual Resource Management Principles to Protect Planning and Design
- **BLM Manual 8431:** Visual Resource Contrast Rating
- **BLM Manual 9100:** Facilities Planning, Design, Construction and Maintenance
- **BLM Manual 9130:** Sign Manual

6.17. Renewable Energy

6.17.1. Federal laws, regulations, statues and orders

See section 6.15, Leasable Minerals for more detail.

- **Energy Policy Act of 2005 (P.L 109-58, 42 USC 15801)**
- **Geothermal Steam Act of 1970, as amended (30 U.S.C. 1001)**

6.17.2. Policies

Wind: It is the BLM's general policy to encourage development of wind energy in acceptable areas. Wind energy site testing and monitoring activities are usually in conformance with and can be accommodated by existing land use plans without a need for a land use plan amendment (I.M. 2006-216).

Solar: The BLM's general policy is to facilitate environmentally responsible commercial development of solar energy projects on public lands (I.M. 2007-097).

Biomass: The BLM's general policy is to encourage use of biomass from public lands.

6.17.3. MOUs

Memorandum of Understanding On Policy Principles For Woody Biomass Utilization for Restoration and Fuel Treatments On Forests, Woodlands, and Rangelands between the U.S. Department of Interior, U.S. Department of Agriculture, and the U.S. Department of Energy (June 18, 2003). The purpose of the MOU is to demonstrate a commitment to develop and apply consistent and complementary policies and procedures across three Federal departments to encourage utilization of woody biomass by-products when ecologically, economically, and legally appropriate, and consistent with locally developed land management plans.

6.18. Travel Management

6.18.1. Federal laws, regulations, statues and orders

Alaska National Interest Lands Conservation Act of 1980 (16 U.S.C. 3101 et. seq.):

Section 811: Ensures that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on all Federal public lands in Alaska by use of snowmobiles, motorboats, and other means of surface transportation traditionally employed for such purposes by local residents, subject to reasonable regulation.

Section 1109: Ensures any valid right of access which existed prior to ANILCA.

Section 1110(a): Ensures the use of snowmachines (during periods of adequate snow cover, or frozen river conditions in the case of wild and scenic rivers), motorboats, airplanes, and non-motorized surface transportation methods for traditional activities (where such activities are permitted by this Act or other law) and for travel to and from villages and homesites on conservation system units, national recreation areas, national conservation areas, and those public lands designated as wilderness study areas.

Section 1110(b): Ensures adequate and feasible access shall be allowed to inholdings and other valid occupiers within or effectively surrounded by conservation system units and wilderness study areas in Alaska, including valid mining claims and subsurface rights.

Section 1111(a): Allows access across conservation system units and wilderness study area to adjacent State or private lands for the purposes of survey, geophysical, exploratory, or other temporary uses.

Section 1310: Allows the use of reasonable access for operation and maintenance of new and existing air and water navigation aids, communication sites and related facilities, and facilities for weather, climate, and fisheries research.

Americans with Disabilities Act Accessibility Guidelines: Sets guidelines for accessibility to places of public accommodation and commercial facilities by individuals with disabilities.

Architectural Barriers Act (ABA) of 1968 (42 U.S.C. 4151 et seq.): Requires access to facilities designed, built, altered, or leased with Federal funds.

Intermodal Surface Transportation Efficiency Act of 1991.

Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 460 et seq.)

National Trails System Act of 1968, as amended (16 U.S.C. 1241 et seq.): Establishes a national trails system and requires that Federal rights in abandoned railroads be retained for trail or recreation purposes, or sold with the receipts to be deposited in the Land and Water Conservation Fund.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy For Users (SAFETEA-LU) of 2005 (P.L. 109-59): Provides funding for recreational trails.

The Transportation Equity Act for the 21st Century (TEA-21) of 1998 (Public Law 105-178): Provides funding for recreational trails.

Wild and Scenic Rivers Act of 1968, as amended (16 U.S.C. 1271 et seq.)

E.O. 11200: Providing for Establishing User Fees Pursuant to the Land and Water Conservation Act of 1965, February 26, 1965 (30 FR 2645)

E.O. 11644, Use of Off-road Vehicles on Public Lands, February, 8, 1972 (37 FR 2877): Establishes policies and provides procedures for controlling or directing use of off-road vehicles on public lands, with the goal of protecting resources, promoting the safety of all users, and minimizing conflicts among various uses.

E.O. 11989, Off-road Vehicles, May 24, 1977 (42 FR 26959): Directs heads of Federal agencies to close areas to off-road vehicle (ORV) use whenever it is determined that use of ORVs is or will cause considerable adverse impact to soil, vegetation, wildlife, wildlife habitat, or certain other resources on the public lands.

E.O. 12962, Recreational Fisheries, June 7, 1995 (60 FR 30769)

E.O. 13195, Trails for America, January 18, 2001 (66 FR 7391): Directs Federal agencies to protect, connect, promote, and assist trails of all types throughout the United States to the extent permitted by law and where practicable, and in cooperation with Tribes, States, local governments, and interested groups.

6.18.2. Policies

It is BLM policy that off-road vehicle use is an acceptable use of public land wherever it is compatible with established resource management objectives (BLM Manual 8340).

6.18.3. BLM Manuals and Handbooks

- **BLM Manual 8340:** Off-Road Vehicles (General).
- **BLM Manual 8341:** Conditions of Use (Off-Road Vehicles).
- **BLM Manual 8342**: Designation of Areas and Trails (Off-Road Vehicles).

6.19. Land Tenure, Land Use, and Withdrawals

6.19.1. Federal laws, regulations, statues and orders

Alaska Native Vietnam Veterans Act of 1998 (Section 432 of Public Law 105-276, Sect. 432, 112 Stat. 2516): Amends the Alaska Native Claims Settlement Act to allow certain Alaska Native veterans serving in the military between 1969 and 1971 an opportunity to apply for a 160-acre Native allotment on eligible Federal lands.

The Act of May 24, 1928, as amended (49 U.S.C. App. 211-213): Authorizes the Secretary to lease contiguous unappropriated public lands (not to exceed 2,560 acres) for a public airport.

Condemnation Act of 1888, as amended (40 U.S.C. 257): Authorizes officers of the government to procure real estate for the erection of a public building or other public uses,

through condemnation, under judicial process, whenever it is necessary or advantageous to the Government to do so.

Engle Act of 1958 (43 U.S.C. 156): Provides that withdrawals for the Department of Defense for more than 5,000 acres shall be made by Congress.

Federal Land Policy and Management Act of 1976 as amended (43 U.S.C. 1701 et seq.): The Act authorizes: acquisition of lands or interests in lands; delineation of boundaries in which the Federal government has right, title, or interest; sale of lands; exchange or conveyance of public lands; management of the use, occupancy, and development of public lands through leases and permits; determination of the suitability of public lands for rights-of-way purposes; review of land classifications in land use planning; modification or termination of land classifications when consistent with land use plans; modification, or revocation of withdrawals.

Federal Land Transaction Facilitation Act of 2000 (43 U.S.C. 2301): Allows the BLM to retain receipts from land sales and to use them to cover administrative costs and acquire properties to improve the nation's land management pattern.

Federal Power Act of 1920 as amended (16 U.S.C. 818): Allows other uses of Federal waterpower withdrawals with Federal Energy Regulatory Commission approval.

Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 460 et seq.): Provides for the establishment of the Land and Water Conservation Fund, special BLM accounts in the Treasury, the collection and disposition of recreation fees, the authorization for appropriation of recreation fee receipts, and other purposes. Authorizes planning, acquisition, and development of needed land and water areas and facilities.

Native Allotment Act of 1906 as amended in 1956: The Act allowed an Alaskan Indian and/or Eskimo to receive up to 160 acres of vacant and unappropriated land. It requires the adjudication of hundreds of small acreage sites throughout Alaska which must be settled prior to completing the final survey and transfer of lands under both the ANCSA and the Statehood Act.

Recreation and Public Purposes Act of 1926, as amended (43 U.S.C. 869): Authorizes the Secretary to classify public lands for lease or sale for recreation or public purposes. The R Amendment Act of 1988 provides that suitable public lands may be made available for use as solid waste disposal sites, in a manner that will protect the United States against unforeseen liability.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1971 (42 U.S.C. 4601): Provides policy for Federal acquisition of lands and interests in lands, and ensures the fair treatment of persons whose real property is acquired or who are displaced as a result of a Federal project.

6.19.2. Policies

FLPMA establishes as public policy that in general, public lands will remain in Federal ownership. Additional policy is laid out in the BLM manual sections listed below. It is general policy of the BLM to: give proper consideration to the major or principal ROW use on the public lands; provide for ROW use of the public land; Allow owners of non-Federal lands surrounded by public land managed under FLPMA, a degree of access which will provide for the reasonable use and enjoyment of the non-Federal land (BLM Manual 2801).

6.19.3. BLM Manuals and Handbooks

- **BLM Manual 2200:** Land Exchanges
- **BLM Manual 2801:** Rights-of-Way General
- **BLM Manual 2802:** Lands Available for FLPMA Grants
- **BLM Manual 2803:** Qualifications for Holding FLPMA Grants
- **BLM Manual 2804:** Applying for FLPMA Grants
- **BLM Manual 2805:** Terms and Conditions for FLPMA Grants
- **BLM Manual 2806:** Rent
- **BLM Manual 2807:** Grant Administration
- **BLM Manual 2808:** Instruction Memoranda
- **BLM Manual 2809:** Special Considerations
- **BLM Manual 9310:** Appraisal of Real Property

6.20. Research Natural Areas

6.20.1. Federal laws, regulations, statues and orders

43 CFR Part 8223: Research Natural Areas. Part 8223 outlines the policy and use of research natural areas.

6.20.2. Policies

43 CFR 8223.0-6: Areas established as research natural areas shall be of sufficient number and size to adequately provide for scientific study, research, and demonstration purposes.

6.20.3. BLM Manuals and Handbooks

BLM Manual 1613: Areas of Critical Environmental Concern. This manual section provides some direction regarding research natural areas.

6.21. Wild and Scenic Rivers

6.21.1. Federal laws, regulations, statues and orders

Wild and Scenic Rivers Act of 1968, as amended (16 U.S.C. 1271 et seq.): Provides for the development and management of certain rivers. The purposes for which Wild and Scenic Rivers are added to the National Wild and Scenic Rivers System are made explicit in section 1(b), specifically, to protect a river's free-flowing condition, water quality, and outstandingly remarkable values.

6.21.2. Policies

The BLM is committed to carrying out the provisions of the Wild and Scenic Rivers Act and shall identify and evaluate all rivers located on BLM-administered lands to determine if they are appropriate for addition to the National Wild and Scenic Rivers System (BLM Manual 8351).

6.21.3. BLM Manuals and Handbooks

- **BLM Manual 8351:** Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, and Management

6.22. Tribal Interest and Subsistence

6.22.1. Federal laws, regulations, statues and orders

Alaska National Interest Lands Conservation Act of 1980 (16 U.S.C. 3101 et. seq.): Title VIII provides for the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives, on the public lands.

E.O. 13084, Consultation and Coordination with Indian Tribal Governments, May 19 or 14, 1998 (63 FR 27655): Provides, in part, that each Federal agency shall establish regular and meaningful consultation and collaboration with Indian tribal governments in the development of regulatory practices on Federal matters that significantly or uniquely affect their communities.

E.O. 13007, American Indian and Alaska Native Religious Freedom and Sacred Land Protections, May 24, 1996 (61 FR 26771): Directs Federal agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sites.

6.22.2. Policies

Instruction Memorandum AK-86-350: Policy for Section 810 Compliance with the Alaska National Interest Lands Conservation Act (August 26, 1986).

6.23. Social and Economic Conditions

6.23.1. Federal laws, regulations, statues and orders

E.O. 12898, Environmental Justice, February 11, 1994 (49 FR 7629): This E.O. requires that each Federal agency consider the impacts of its programs on minority and low income populations.

Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109): Requires and encourages prevention and reduction of waste streams and other pollution through minimization, process change, and recycling. Encourages and requires development of new technology and markets to meet objectives.

6.23.2. Policies

Instruction Memorandum No. 2002-167, Social and Economic Analysis for Land Use Planning: Provides guidance on integrating social science and economic information into land use planning; supplements guidance in the BLM Land Use Planning Handbook (H-1601-1).

H-1601-1 Land Use Planning Handbook Appendix D: provides specific guidance for social science considerations in land use planning decisions.

Chapter 7. Scoping Report or Summary of Scoping Report

Public scoping began on February 29, 2008 with publication of a notice of intent to prepare the Eastern Interior RMP. A series of public meetings were held between April 10 and June 24, 2008. Public meetings were held in Anchorage, Tok, Delta Junction, Fairbanks, Eagle, Chalkyitsik, Central, and Chicken.

The scoping period was initially set for 120 days, with an ending date of July 1, 2008. However given the seasonal nature of some of the communities within the planning area, some scoping meetings could not be scheduled until late May or June. The formal scoping period was extended until August 15, 2008 to allow the public additional time to submit comments after the last public meeting was held on June 24, 2008. Additional scoping comments submitted after August 15th are being considered, but may not be reflected in Table 7.1.

Table 7.1. Summary of Scoping Comments on the Eastern Interior RMP

Major Subject (# comments)	Number of comments by Sub-Category	Number of Individual Comments
Soil Water and Air (33)	Climate Change	16
	Water Quality	11
	Air Quality	1
	Soil/Erosion	1
	Other water Issues	4
Fish (23)	Salmon	12
	Other fish issues	11
Wildlife (23)	Other wildlife issues	16
	Porcupine Caribou	3
	Predator Control	4
Fire Management (6)		6
Cultural and Paleontological Resources (6)		6
Visual Resource Management (3)		3
Wilderness (6)		6
Forest Products/Vegetation (5)		5
Noxious and Invasive Plants (8)		8
Minerals (59)	Locatable Minerals	5
	Leasable Minerals	6
	General or Uncategorized	48
Recreation (34)	White Mountains NRA	6
	General or Uncategorized	28
Travel Management (110)	White Mountains NRA	6
	ANCSA 17b Easements	6
	R.S. 2477 Rights-of-way	4
	General or Uncategorized	96
Lands and Realty (73)	ANCSA 17(d)(1) withdrawals	14
	Other withdrawals	4
	Conveyances	7
	Alaska Natural Gas Pipeline	3
	Navigability	7
	Doyon Exchange/Right-of-way	16
	General	23

Special Designations (19)	National Natural Landmarks Program	1
	Research Natural Areas	5
	Areas of Critical Environmental Concern	2
	General	11
Pinnell Mountain Trail (1)		1
Wild and Scenic Rivers (12)	Fortymile River	5
	Beaver Creek	2
	Birch Creek	1
	General	4
Social and Economic (5)		5
Subsistence (44)		44
Process (85)	Public Outreach	11
	Combining RMPs	12
	Tribal Consultation	7
	Other	55
General (41)	General conservation concern	10
	Black River	6
	General	25
Total		584

7.1. Major Issues identified during scoping

Climate change: How will the planning process 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?

Water Quality: How will the RMPs protect existing water quality and improve water quality in areas that are degraded from past or ongoing activities?

Fisheries Management: How will the BLM manage aquatic habitats that support fish populations (both salmonid and non-salmonid) which are important for subsistence, recreation, commercial use, and international treaty obligations?

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

Subsistence: How will the BLM manage public lands to provide continued access to subsistence resources and to support subsistence based economies in local communities?

Minerals Management: What lands currently withdrawn from mineral entry, location, and leasing should be opened, and what lands should remain closed?

Rights-of-way Management: How would access issues involving a Victoria Creek road and/or pipeline be managed?

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

Recreation and Visitor Services: What range of recreational opportunities should be provided to meet the wide variety of public demand?

Wilderness Characteristics: How will BLM address preservation of wilderness characteristics in the planning area?

7.2. Nominations for special designations

Areas of critical environmental concern (ACECs) are a BLM designation that highlights areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, and scenic values, fish and wildlife resources, or other natural systems and processes. The ACEC designation indicates to the public that BLM recognizes that an area has significant values and has established special management measures to protect those values (BLM 1988). To be designated, ACECs must meet the relevance and importance criteria defined under 43 CFR 1610.7-2(a) and must require special management (43 CFR 1601.0-5(a)).

During scoping BLM received nominations for new ACECs or to expand existing research natural areas (RNAs). One group recommended reviewing and if necessary, expanding the boundaries of three existing RNAs to ensure that the areas are of an adequate size to protect the integrity of the natural systems. Under current policy (BLM 2005 H-1601-1), BLM considers RNAs to be a type of ACEC. Therefore, nominations to review/expand existing RNA boundaries were evaluated as an ACEC nomination.

Upper Black River: Two groups nominated the upper Black River watershed (1,578,000 acres) as an ACEC. Identified values include salmon spawning and rearing habitat, municipal water source for Chalkyitsik, fish and wildlife subsistence resources, scenic values, and cultural and historic values.

Salmon Fork of the Black River: One individual nominated the Salmon Fork as an ACEC due to its value as salmon spawning habitat and its use as a source of subsistence resources.

Big Windy Hot Springs (Steese NCA): One group recommended that BLM review the RNA boundaries because it is very small, only 160 acres, and is susceptible to disturbances outside of its boundaries. The Steese Draft RMP/EIS (BLM 1984a) recommended the acreage for the RNA be anywhere from 4,400 acres to 12,733 acres (Juday, 1998).

Mount Prindle RNA (Steese NCA and White Mountains NRA): One group recommended that BLM review the RNA boundaries because a considerably larger area than what is currently designated was nominated and reviewed for inclusion in the National Natural Landmarks Program, under the National Parks Service in the late 1970s (Juday, 1988). The nominators noted that the larger area still retains the values for which it was reviewed and the RNA boundary should be expanded to ensure proper protections for the values of the area.

Limestone Jags RNA (White Mountains RNA): One group recommended that BLM review the RNA boundaries because the spine of the White Mountains, an area of 180,000 acres that includes the Limestone Jags RNA, was nominated for inclusion in the National Natural Landmarks Program (BLM 1984b). The current Limestone Jags RNA is only 5,170 acres. The nominators noted that the larger area is important seasonal habitat for Dall sheep and the White Mountains Caribou Herd and has scientific significance.

Chapter 8. List of Preparers

Table 8.1. List of Preparers of the Analysis of the Management Situation

Name	Area of Responsibility	Participation
Rob Brumbaugh	Mineral Potential Reports, Leasable Minerals	Author
Jeanie Cole	RNAs, Grazing, Scoping summary, Purpose and Need	Project administrator, Author
Collin Cogley	Forestry, Recreation White Mountains, and Beaver Creek Wild River	Author
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Chapter 9. Acronyms and Glossary

9.1. Acronyms

Acronyms

AAC:
Alaska Administrative Code
ACEC:
Area of Critical Environmental Concern
ACS:
American Community Survey [Census Bureau]
ADCA:
Alaska Division of Community Advocacy
ADEC :
Alaska Department of Environmental Conservation
ADCRA:
Alaska Department of Community and Regional Affairs
ADF&G:
Alaska Department of Fish and Game
ADLWD:
Alaska Department of Labor and Workforce Development
ADNR:
Alaska Department of Natural Resources
AFB:
Air Force Base
AFS:
Alaska Fire Service
AKDOT:
Alaska Department of Transportation
AICC:
Alaska Incident Coordination Center
AIWFM:
Alaska Interagency Wildland Fire Management Plan
AKEPIC:
Alaska Exotic Plants Information Clearinghouse
ANCSA:
Alaska Native Claims Settlement Act
ANILCA:
Alaska National Interest Lands Conservation Act
AS:
Alaska Statute
AWFCG:
Alaska Wildland Fire Coordination Group
BEA:
[Federal] Bureau of Economic Analysis
BLM:
Bureau of Land Management
BPIF:
Boreal Partners in Flight

CERCLA:
Comprehensive Environmental Response, Compensation and Liability Act
CEQ:
Council on Environmental Quality
C&T:
Customary and Traditional
CFR:
Code of Federal Regulations
CNIPM:
Committee for Noxious and Invasive Plant Management
CSU:
Conservation system unit
CAA:
Clean Air Act
CATG:
Council of Athabascan Tribal Governments
CASTNet:
Clean Air Status and Trends Network
DCRA:
Alaska Division of Community and Regional Affairs
D.O.:
dissolved oxygen
DOF:
[Alaska] Division of Forestry
EA:
Environmental Assessment
EFH:
Essential Fish Habitat
EI:
Eastern Interior
EIRAC:
Eastern Interior Resource Advisory Council
EIS:
Environmental Impact Statement
EO:
Executive Order
EPA:
Environmental Protection Agency
ERMA:
Extensive Recreation Management Area
ESA:
Endangered Species Act
FAA:
Federal Aviation Administration
FC:
fecal coliform
FERC:
Federal Energy Regulatory Commission

FAA:
Federal Aviation Adminstration
FLPMA:
Federal Land Policy and Management Act
FCH:
Fortymile Caribou Herd
FMO:
Fire Management Officer
FRCC:
Fire Regime Condition Class
FSB:
Federal Subsistence Board
FWS:
[U.S.] Fish and Wildlife Service
GMU:
Game Management Unit
GSA:
General Services Administration
GVW:
Gross Vehicle Weight
GVWR:
Gross Vehicle Weight Rating
IMPROVE:
Interagency Monitoring of Protected Visual Environments Program
IC'd:
interim conveyed
IM:
Instruction Memorandum
IRA:
Indian Reorganization Act
MBF:
Thousand board feet
MFP:
Management Framework Plan
mg/m3:
milligrams per cubic meter
MOU:
Memoradum of Understanding
NAAQS:
National Ambient Air Quality Standards
NCU:
National Conservation Unit
NEPA:
National Environmental Policy Act
NIP:
Non-native, invasive plant
NIS:
Non-native, invasive species

NGOs:
Non-governmental organizations
NADP:
National Atmospheric Deposition Network
NMFS:
National Marine Fisheries Service
NOA:
Notice of Availability
NOAA:
National Oceanic and Atmospheric Administration
NOI:
Notice of Intent
NP:
National Preserve [Yukon-Charlie Rivers National Preserve)
NPS:
National Park Service
NRCS:
Natural Resources Conservation Service (under US Department of Agriculture)
NSO:
No Surface Occupancy
NTU:
nephelometric turbidity units
NWR:
National Wildlife Refuge
NWSR:
National Wild and Scenic River [Fortymile NWSR]
OHV:
Off-highway Vehicle
ORV:
Off-road Vehicle [old terminology used in chapter 3]
ORV:
Outstandingly remarkable value
PCH:
Porcupine Caribou Herd
PFC:
Proper Functioning Condition
P.L.:
Public Law
PLO:
Public Land Order
PM2.5:
A measure of fine particles in the air
ppm:
parts per million
PSD:
Prevention of Significant Deterioration
R:
Range

RFD:
Reasonable Foreseeable Development
R&PP:
Recreation and Public Purposes [Act]
RAC:
Resource Advisory Council (BLM-Alaska)
RAC:
Resource Advisory Council (Federal Subsistence Program)
RAWS:
Remote Automated Weather Stations
RAMP:
Recreation Area Management Plan
RMIS:
Recreation Management Information System
RMP:
Resource Management Plan
RNA:
Research Natural Area
ROD:
Record of Decision
ROW:
Right-of-way
Sec.:
Section
SRMA:
Special Recreation Management Area
SRP:
Special Recreation Permit
SSS:
Special Status Species
NCA:
[Steese] National Conservation Area
T:
Township
TAS:
Tanacross Airfield Site
TCC:
Tanana Chiefs Conference
TDS:
total dissolved solids
T&E:
Threatened and Endangered [species]
TSP:
Total Suspended Particulate Matter
USC:
U.S. Code
UAF:
University of Alaska Fairbanks

µg/m3:
micrograms per cubic meter

Unit:
Game Management Unit

USDA:
United States Department of Agriculture

USGS:
U.S. Geological Survey

UTV:
Utility Terrain Vehicle

VRM:
Visual Resource Management

VUD:
Visitor Use Day

WAMCATS:
Washington-Alaska Military Cable and Telegraph System

WFSA:
Wildland Fire Situation Analysis

WMCH:
White Mountains Caribou Herd

NRA:
[White Mountains] National Recreation Area

WSR:
Wild and Scenic River

WSR Act:
Wild and Scenic Rivers Act

9.2. Glossary

Glossary

Alaska National Interest Lands Conservation Act (ANILCA):
A law passed in 1980 designating 104 million acres for conservation by establishing or expanding national parks, wildlife refuges, wild and scenic rivers, wilderness areas, forest monuments, conservation areas, recreation areas, and wilderness study areas to preserve them for future generations.

Alaska Native Claims Settlement Act (ANCSA):
A law passed by Congress in 1971 to settle aboriginal land claims in Alaska. Under the settlement the Natives received title to a total of over 44 million acres, to be divided among some 220 Native Villages and 12 Regional Corporations established by the act. The corporations shared in a payment of $962,500,000.

allelopathic:
Plants that produce chemicals that are transported to the soil and inhibit germination and growth of other vegetation.

ambient:
Environmental or surrounding conditions

anadromous:
Anadromous fish are those which live most of their lives in the sea, but return to fresh water to spawn. Anadromous streams are those which support fish species that migrate between freshwater and marine waters, such as salmon.

anthropogenic:
Effects, processes, objects, or materials are those that are derived from human activities, as opposed to those occurring in natural environments without human influences.

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.

Area of Critical Environmental Concern (ACEC):
An area within the public lands where special management attention is required to protect important historic, cultural, or scenic values, fish and wildlife or natural systems or processes, or to protect life and safety from natural hazards.

archaeology :
The study of past human cultures through the analysis of their material and physical remains.

artifact :
An object that was made, used, and/or transported by humans that provides information about human behavior in the past. Examples include pottery, stone tools, and bones with cut marks.

Athabascan:
The name of a broad group of closely-related languages that characterize the people who live in the Alaskan Interior, Canadian Interior, and the Southwestern United States.

Best Management Practices:
A suite of techniques that guide, or may be applied to, management actions to aid in the achieving of desired outcomes.

Code of Federal Regulations (CFR):
A codification of the general and permanent rules published in the Federal Register by the Executive Departments and agencies of the Federal Government. The Code is divided into 50 titles which represent broad areas subject to Federal regulation. Each volume of the Code is revised at least once each year and issued on a quarterly basis.

commercial recreational use:
Recreational use of public lands and related waters for business or financial gain. When any person, group, or organization makes or attempts to make a profit, receive money, amortize equipment, or obtain goods or services, as compensation from participants in recreational activities occurring on public lands, the use is considered commercial. An activity, service, or use is commercial if anyone collects a fee or receives other compensation that is not strictly a sharing of, or is in excess of, actual expenses incurred for the purpose of the activity, service or use (Guides, outfitters, air taxi operators etc.).

condition class:
A relative measurement describing the degree of departure from the historical fire regime. These three classes (Condition Classes 1, 2, and 3) categorize and describe vegetation composition and structure conditions that currently exist inside the fire regime groups, and serve as generalized wildfire rankings. The risk of loss of key ecosystem components from wildfires increases from Condition Class 1 (the lowest risk) to Condition Class 3 (the highest risk). (Also see fire regime condition class).

continental-subarctic:
North of the humid continental climate, from about 50º to 70º N, in a broad swath extending from Alaska to Newfoundland in North America and from northern Scandinavia to Siberia in

Eurasia, lie the continental subarctic climates. These are regions dominated by the winter season, a long, bitterly cold period with short, clear days, relatively little precipitation (mostly in the form of snow), and low humidity. Mean monthly temperatures are below freezing for six to eight months, with an average frost-free period of only 50-90 days per year, and snow remains on the ground for many months. Summers are short and mild, with long days and a prevalence of frontal precipitation associated with maritime tropical air within traveling cyclones. As a result of these temperature extremes, annual temperature ranges are larger in continental subarctic climates than in any other climate type on Earth, up to 30º C (86º F) through much of the area and more than 60º C (108º F) in central Siberia, although coastal areas are more moderate. Annual precipitation totals are mostly less than 50 centimeters (20 inches), with a concentration in the summer.

conveyed:
Title to land was transferred from one party to another. The United States conveys title to land to Native corporations by patent and interim conveyance (IC) and to the State of Alaska by patent and tentative approval (TA).

cryoturbation:
In permafrost soils, cryoturbation (frost churning) refers to the mixing of materials from various horizons of the soil right down to the bedrock due to freezing and thawing.

17(d)(1) withdrawal :
A withdrawal made under section 17(d)(1) of the Alaska Native Claims Settlement Act for study to determine the proper classification of the lands and to determine the public values of the lands which need protection.

dispersed recreation:
Recreation activities of an unstructured type which are not confined to specific locations such as recreation sites. Example of these activities may be hunting, fishing, off-road vehicle use, hiking, and sightseeing.

endangered species:
An animal or plant species designated by the U.S. Fish and Wildlife Service to receive Federal protection status because the species is in danger of extinction throughout all or a significant portion of its natural range.

environmental impact statement (EIS):
A detailed statement of a given project's environmental consequences, including unavoidable adverse environmental effects, alternatives to the proposed action, the relationship between local short-term uses and long-term productivity, and any irreversible or irretrievable commitment of resources.

environmental justice :
The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies.

Essential Fish Habitat (EFH):
Essential Fish Habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. EFH is defined by the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265).

Executive Order:
A rule or order having the force of the law.

extensive recreation management area (ERMA):
A public lands unit identified in land use plans containing all acreage not identified as a special recreation management area. Recreation management actions within an ERMA are limited to only those of a custodial nature.

Federal Land Policy and Management Act (FLPMA):
A law passed in 1976 to establish public land policy, guidelines for its administration, and provide for the management, protection, development, and enhancement of the public lands.

fire dependent ecosystem:
A vegetative community that has evolved adaptations to fire such as reliance on fire as a disturbance agent, protection of a species against the effects of fire, or strengthening or enhancement of a species through a fire event.

fire frequency:
A general term referring to the reoccurrence of fire in a given area over time. Also referred to as fire cycle.

fire regime:
A description of the patterns of fire occurrences, frequency, size, severity, and, sometimes, vegetation and fire effects, in a given area or ecosystem. A fire regime is a generalization based on fire histories at individual sites. There are five standard fire regimes:

Fire Regime I, with a fire frequency of 0-35 years, surface fire to mixed fire type.

Fire Regime II, with a fire frequency of 0-35 years frequency, stand replacement fire type.

Fire Regime III, with a fire frequency of 35-100+ years, with a mixed fire type.

Fire Regime IV, with a fire frequency of 35-100+ years, with a stand replacement fire type.

Fire Regime V, with a fire frequency of 100+ years, with a stand replacement fire type.

Fire Regime Condition Class (FRCC) :
(1) An interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels, and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments.

(2) A classification of the amount of departure from the natural fire regime. There are three FRCCs. They include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g. insect and diseased mortality, grazing, and drought). The three Condition Classes are:

- Condition Class I: Within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.
- Condition Class II: Moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.
- Condition Class III: High departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.

fire return interval:
The number of years between two successive fire events for a given area.

fire severity:
The degree to which a site has been altered or disrupted by fire; loosely, a product of fire intensity and residence time. In Alaska, fire severity refers to the amount of organic layer removed by a fire event.

Federal Register:
A daily publication that reports Presidential and Federal Agency documents.

fuels treatment:
The development and implementation of prescribed fire or a mechanical or chemical treatment to wildland fuels in given areas to meet resource objectives.

Gross vehicle weight rating (GVWR):
GVWR is the maximum allowable total weight of a vehicle that is loaded to capacity, including the weight of the vehicle itself plus fuel, passengers, cargo, and other miscellaneous items such as extra aftermarket parts, as specified by the manufacturer.

invasive species:
Organisms that have been introduced into an environment where they did not evolve. Executive Or¬der 13112 focuses on organism whose presence is likely to cause economic harm, environmental harm, or harms to human health. See also noxious weeds.

Karst:
A type of topography that results from dissolution and collapse of limestone, dolomite, or gypsum beds, characterized by closed depressions or sinkholes, caves, and underground drainages.

land status:
The legal standing of land within BLM boundaries. Land status includes private, military, State, State-selected, Native, Native-selected, and unencumbered public lands.

leasable minerals:
Minerals subject to exploration and development under leases, permits, and licenses under various mineral leasing acts. Leasable minerals include oil, gas, and coal.

lease:
A means of allowing long-term use of public lands without transferring ownership of that land.

Loess:
Mixure of silt and very fine sand transported by wind from exposed sediment deposits of braided rivers. A wind deposited silt.

locatable minerals :
Minerals subject to appropriation under the mining laws and 43 CFR 3809. Locatable minerals include base metals (e.g. copper, lead, and zinc), noble metals (e.g. silver and gold), nickel, iron, platinum group elements, bentonite, gem and semiprecious gemstones, and nephrite jade. See also leasable minerals.

Management Framework Plan (MFP):
A planning decision document prepared before the effective date of the regulations implementing the land use planning provisions of FLPMA. The MFP establishes, for a given area of land, land-use allocations, coordination guidelines for multiple-use, and objectives to be achieved for each class of land use or protection.

Memorandum of Understanding (MOU):
A formal, written agreement between organizations or agencies that presents the relationship between the entities for purposes of planning and management.

Metalliferous:
Containing, yielding, or producing metal or ore.

Mineralogic:
The naturally occurring inorganic objects and features associated with karst areas and caves.

National Environmental Policy Act of 1969 (NEPA):
An act mandating an environmental analysis and public disclosure of Federal actions.

National Wild and Scenic Rivers System:
A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three types of streams: 1) recreation—rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, 2) scenic—rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and 3) wild—rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with watersheds or shore-lines essentially primitive and waters unpolluted.

Native-selected:
BLM lands that have been selected by a Native corporation under the ANCSA which gave Alaska Natives an entitlement of 44 million acres to be selected from a pool of public lands specifically defined and withdrawn by the Act for that purpose.

no action alternative:
The most likely condition expected to exist if current management practices continue unchanged. The analysis of this alternative is required for Federal actions under the National Environmental Policy Act of 1969 (NEPA).

noxious weed:
A plant species designated by Federal or State law as generally possessing one or more of the following characteristics: aggressive and difficult to manage; parasitic; a carrier or host of serious insects or disease; or non-native, new, or not common to the U.S. See also invasive species.

off-highway vehicle (OHV):
Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: 1) any non-amphibious registered motorboat; 2) any military, fore, emergency, or law enforcement vehicle being used for emergency purposes; 3) any vehicle whose use is expressly authorized by the authorizing officer, or otherwise officially approved; 4) vehicles in official use; and 5) any combat or combat support vehicle when used for national defense (CFR 43 sec. 8340.05(a)).

organic layer, organic mat:
Layer on top of the soil consisting of dead and decaying leaves, branches, wood, and other plant parts.

outstandingly remarkable value (ORV):
As defined by the Wild and Scenic Rivers Act of 1968, an "outstandingly remarkable value" is the characteristic of a river segment that is judged to be a rare, unique, or exemplary feature that is significant at a regional or natural scale. Values can be recreational, scenic, geological, historical, cultural, biological, botanical, ecological, heritage, hydrological, paleontological, scientific, or research-related.

paleontological:
Of or relating to past geological periods. Paleontological resources include fossils of shellfish, swamp forests, dinosaurs, and other prehistoric plants and animals, including both vertebrates and invertebrates, and direct evidence of their presence (tracks, worm burrows, etc).

particulates:
Fine liquid or solid particles such as dust, smoke, mist, fumes or smog, found in the air or emissions.

permafrost:
Soil, sand, gravel, or bedrock that has remained below 32°F for two or more years. Permafrost features include: frost boils (accumulation of excess water and mud in subsurface materials during spring thaw which may break through the surface), hummock (a mound of broken ice projecting upward, formed by ice deformation), ice wedge (a build up of ice in frozen soil, that is wedge-shaped in cross-section), ice lenses (accumulation of ice in cavities and hollows in the soil), pingos (an arctic mound or conical hill, consisting of an outer layer of soil covering a core of solid ice), polygonal ground (a type of patterned ground in areas of ice wedges), and solifluction lobes (an isolated tongue-shaped feature formed by rapid solifluction (downhill movement of soil) on a slope).

permit:
A means of authorizing use of public lands in an equitable, safe, and enjoyable manner while minimizing adverse impacts and user conflicts. A permit does not transfer ownership of the land, it simply allows the permittee to use the land in a pre-determined fashion for a set amount of time.

piscivorous:
Habitually feeding on fish; fish-eating.

planning area :
The region within which the BLM will make decisions during a planning effort. A planning area boundary includes all lands regardless of jurisdiction; however, the BLM will only make decisions on lands that fall under the BLM jurisdiction (including subsurface minerals).

pollutants:
Any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals, or ecosystems.

Popcorn:
The most common type of speleothem; these small coral-like formations are found as a coating on the cave surfaces.

prescribed fire :
A fire purposefully ignited to meet specific objectives. Prior to ignition, a written, approved fire plan must exist and legal requirements must be met.

public land:
Land or interest in land owned by the U.S. and administered by the Secretary of the Interior through the BLM without regard to how the U.S. acquired ownership, except land located on the Outer Continental Shelf, and land held for the benefit of Native Americans, Aleuts, and Eskimos.

Public Land Order (PLO):
Congressional or secretarial orders defining withdrawals of public lands by statute or secretarial order from operation of some or all of the public land laws.

PM 2.5:
a measure of fine particles in the air

Recreation and Public Purposes (R&PP) Act:
An act authorizing the sale or lease of public lands for recreational or public purposes to State and local governments and to qualified non-profit organizations.

R&PP lease:
A lease issued by the Federal government under the R&PP Act for use of public lands to serve community and recreational purposes on public lands by issuing leases for uses such as parks and cemetery.

record of decision (ROD):
A public document associated with an Environmental Impact Statement (EIS) that identifies all alternatives, provides the final decision, the rationale behind that decision, and commitments to monitoring and mitigation.

recreation area management plan (RAMP):
An activity level or step-down plan to develop more specific management guidelines for a special recreation management area.

Research Natural Area (RNA):
An area that is established and maintained for the primary purpose of research and education because the land has one or more of the following characteristics: 1) a typical representation of a common plant or animal association; 2) an unusual plant or animal association; 3) a threatened or endangered plant or animal species; 4) a typical representation of common geologic, soil, or water features; or 5) outstanding or unusual geologic, soil, or water features. Uses of RNAs are defined in 43 CFR 8223.1.

right-of-way (ROW):
The legal right to pass over another owner's land, or the area over which a right-of-way exists.

R.S. 2477:
A provision originally part of the 1866 Mining Act that states in its entirety, "The right-of-way for the construction of highways over public lands, not reserved for public uses, is hereby granted." In 1873, the provision was separated from the Mining Act and reenacted as Revised Statute (R.S.) 2477. In 1938, it was recodified as 43 U.S.C. Section 932. FLPMA repealed both the 1866 Mining Act and R.S. 2477, but all rights-of-way that existed on the date of the repeal (October 21, 1976) were preserved under 43 U.S.C. Section 1769. The State of Alaska recognizes approximately 650 R.S. 2477 routes throughout the State. The assertion of these routes has not been recognized and current BLM policy is to defer any processing of R.S. 2477 assertions except where there is a demonstrated and compelling need to make a determination.

scoping:
The process used to determine, through public involvement, the range of issues that the RMP should address.

Sensitive Species :
Those wildlife, fish, or plant species designated by the BLM Alaska State Director, usually in cooperation with the State agency responsible for managing the species, as sensitive. They are: 1) species under status review by U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service; 2) species whose numbers are declining so rapidly that Federal listing may be necessary; 3) species with typically small and widely dispersed populations; or 4) species inhabiting ecological refugia or other specialized or unique habitats.

seral:
Relating to ecological communities where all successional stages of biotic development are represented.

snowmachine, snowmobile:
A motor vehicle of 850 pounds or less gross vehicle weight, primarily designed to travel over ice or snow, and supported, in part, by skis, belts, cleats, or low-pressure tires (11 AAC 12.340(9)).

Special Recreation Management Area (SRMA):
Areas where the management emphasis is on recreation, though other resource uses and development are allowed.

special recreation permit:
A means of authorizing recreational uses of public lands and waters. Special recreation permits are issued for specific recreational uses as a means to manage visitor use, protect

natural and cultural resources, and provide a mechanism to accommodate commercial recreational uses. There are four types of permits: commercial, competitive, organized groups/events, and individuals or groups in special areas.

Special Status Species:
Special status species include the following: endangered species, threatened species, proposed species, candidate species, state-listed species, and BLM sensitive species.

species:
Any species or subspecies of fish or wildlife or plants (and in the case of plants, any varieties), and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature

Speleothem:
Natural mineral formations or deposits occurring in a cave, including stalactites, stalagmites, popcorn, and cave pearls.

stand replacement fire :
A fire which kills all or most of the living overstory trees in a forest and initiates forest succession or regrowth. Also explicitly describes the nature of fire in grasslands and some shrublands.

State-selected:
These are formerly unappropriated and unreserved public lands that were selected by the State of Alaska as part of the Alaska Statehood Act of 1958 and Alaska National Interest Lands Conservation Act (ANILCA) of 1980. Until conveyance, State-selected lands outside of National Park system lands or National Wildlife refuges will continue to be managed by the BLM. ANILCA allowed for overselection by the State by up to 25 percent of the entitlement (sec. 906 (f)). Therefore, some State-selected lands will eventually be retained in long-term Federal ownership. State-selected lands constitute approximately 12 percent of the planning area and 28% of BLM-managed land.

subsistence/subsistence use:
Relying on fish, wildlife and other wild resources for food, shelter, clothing, transportation, handicrafts, and trade. An Alaskan resident living in a rural area may participate in Federal subsistence hunting on certain unencumbered BLM lands.

succession:
The replacement in time of one plant community with another. The prior plant community (or successional stage) creates conditions that are favorable for the establishment of the next community.

temperature inversion:
A temperature inversion occurs when the air is colder at ground level than higher elevations. Cold air is heavier than warm air, once an inversion forms, the air near ground level is stable. Mixing that would normally occur from rising of warm air is inhibited. Temperature inversions generally occur during winter conditions characterized by clear skies, little wind, short daylight hours, and extremely low surface temperatures.

thermokarst:
Ground subsidence due to the thawing of permafrost.

threatened species:
A designation by the U.S. Fish and Wildlife Service when a plant or animal species is likely to become endangered throughout all or a specific portion of its range within the foreseeable future.

tundra:
A level or undulating treeless plain characteristic of northern arctic regions in both hemispheres. It consists of black mucky soil with a permanently frozen subsoil, but supports a dense growth of mosses and lichens, and dwarf herbs and shrubs, often showy-flowered.

turbid waters/turbidity:
The opaque or dark color in water due to fine suspended sediment, algal growth, or dissolved chemicals.

tussock:
A compact tuft of grass or sedges, or an area of raised solid ground, which is held together by roots of low vegetation, found in a wetland or tundra.

tussock tundra:
A tundra landscape with a herbaceous vegetation of tussock forming plants, particularly Eriophorum spp.

unencumbered/unencumbered BLM lands:
Public lands that have not been selected by the State or Native organizations. These lands will be retained in long-term Federal ownership. Some encumbered lands will also be retained once the conveyance process is complete.

Visual Resource Management :
A means of managing visual resources by designating areas as one of four classes: Class I: maintaining a landscape setting that appears unaltered by humans: Class II: designing proposed alterations so as to retain the existing character of the landscape; Class III: designing proposed alterations so as to partially retain the existing character of the landscape; and Class IV: providing for management activities which require major modifications of the existing character of the landscape.

Wild and Scenic River, Wild River, National Wild River:
A river that is part of the National Wild and Scenic River System. In Alaska, most Wild and Scenic Rivers were designated through the ANILCA. There are three of these rivers in the planning area: Beaver Creek, Birch Creek, and Fortymile River. See also National Wild and Scenic Rivers System.

wildfire:
An unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put out the fire.

wildland fire :
Any nonstructural fire, other than prescribed fire, that occurs in an area under the fire management jurisdiction of a land management agency. This term encompasses fires previously called "wildfires."

wildland fire implementation plan (WFIP):
A progressively developed assessment and operational management plan that documents the analysis and describes the appropriate management response for a wildland fire use event.

Wildland Fire Situation Analysis (WFSA):
A decision making process that evaluates alternative wildfire suppression strategies against selected environmental, social, political, and economic criteria and provides a record of those decisions.

wildland fire use :
The application of the appropriate management response to naturally ignited wildland fires to accomplish specific resource management objectives in predefined designated areas.

wildland urban interface:
The line, area, or zone where structures and other human developments meet or intermingle with undeveloped wildland or vegetation fuels.

withdrawal:
Federal land set aside and dedicated to a present, governmental use; public land set aside for some other public purpose, e.g., pending a determination of how the land is to be used; an action approved by the Secretary or a law enacted by Congress that closes land to specific uses under the public land laws (usually sale, settlement, location, and entry), or limits use to maintain public values or reserves area for particular public use or program, or that transfers jurisdiction of an area to another Federal agency. Usually enacted through a public land order or legislation.

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Chapter 11. Appendices

11.1. Appendix A: Distribution of Fish Species

Species Codes

K - Chinook salmon (king)	**BW - broad whitefish**	**LC - least cisco**
CH - chum salmon	**HW - humpback whitefish**	**SF - inconnu (sheefish)**
CO - coho salmon	**RW - round whitefish**	**NP - northern pike**
AG - arctic grayling	**W - whitefish (unidentified)**	**BB - burbot**

Table 11.1. Distribution of primary commercial, sport, and subsistence fish species in major rivers and tributaries in the planning area.

	Fish Species											
Management Unit	**K**	**CH**	**CO**	**AG**	**BW**	**HW**	**RW**	**W**	**LC**	**SF**	**NP**	**BB**
Upper Black River Subunit												
Bear Mountain Creek				x				x			x	x
Black River	x	x	x	x	x	x			x	x	x	
Bull Creek				x				x				
Drifting Snow Creek				x				x				

	Fish Species											
Management Unit	**K**	**CH**	**CO**	**AG**	**BW**	**HW**	**RW**	**W**	**LC**	**SF**	**NP**	**BB**
Grayling Fork Black River		x		x				x				
Kevinjik Creek		x		x				x				
Little Black River				x				x			x	x
Rice Gulch Creek				x				x				
Runt Creek				x				x				
Salmon Fork Black River	x	x		x	x	x				x	x	x
Tetthajik Creek				x				x				
Van Hatten Creek				x				x				
Wood River				x				x				
Fortymile Area												
Dennison Fork				x				x				

	Fish Species											
Management Unit	**K**	**CH**	**CO**	**AG**	**BW**	**HW**	**RW**	**W**	**LC**	**SF**	**NP**	**BB**
Fortymile River				x			x			x		x
Middle Fork North Fork Fortymile River				x			x					
Mosquito Fork				x			x					
North Fork Fortymile				x			x					
O'Brien Creek				x				x				
Seventymile River	x	x		x			x			x	x	x
South Fork Fortymile				x			x					
Walker Fork				x				x				
West Fork Dennison Fork				x				x				
Steese National Conservation Area												
Acme Creek				x				x				

	Fish Species											
Management Unit	**K**	**CH**	**CO**	**AG**	**BW**	**HW**	**RW**	**W**	**LC**	**SF**	**NP**	**BB**
Big Windy Creek				x				x				
Birch Creek	x	x	x	x		x	x		x	x	x	x
Clums Fork				x				x				
Harrington Fork				x				x				
Harrison Creek	x			x				x				
North Fork Birch Creek				x				x				
North Fork Preacher Creek				x				x				
Preacher Creek		x		x			x			x		
Sheep Creek	x			x				x				
South Fork Birch Creek				x				x				
Twelvemile Creek	x			x				x				x

	Fish Species											
Management Unit	**K**	**CH**	**CO**	**AG**	**BW**	**HW**	**RW**	**W**	**LC**	**SF**	**NP**	**BB**
Wolf Creek				x				x				
White Mountains National Recreation Area												
Bear Creek				x				x				
Beaver Creek	x	x	x	x			x			x	x	x
Champion Creek				x				x				
Mascot Creek				x				x				
Moose Creek				x				x				
Nome Creek	x			x								
O'Brien Creek				x				x				
Ophir Creek	x			x				x				
Trail Creek				x				x				

	Fish Species											
Management Unit	**K**	**CH**	**CO**	**AG**	**BW**	**HW**	**RW**	**W**	**LC**	**SF**	**NP**	**BB**
Victoria Creek	x	x		x				x				
Wickersham Creek				x				x			x	
Willow Creek				x				x				

Species Codes

K - Chinook salmon (king)	**BW - broad whitefish**	**LC - least cisco**
CH - chum salmon	**HW - humpback whitefish**	**SF - inconnu (sheefish)**
CO - coho salmon	**RW - round whitefish**	**NP - northern pike**
AG - arctic grayling	**W - whitefish (unidentified)**	**BB - burbot**

Sources: ADF&G 1986; Carufel 1989; Kostohrys et al. 1994; Townsend 1996; Burr 2006; Johnson and Daigneault 2008

11.2. Appendix B: Economic and Demographic Tables

Table 11.2. Eastern Interior Planning Area Income Data

Town/Area	Per Capita Income	Household Income	Median Family Income
Alaska	$26,310 (ACS 2005)	$67,084 (ACS 2005)	$56,234 (ACS 2005)
Anchorage	$29,581	$72,931	$61,217
Fairbanks North Star Borough	$33,568 (BEA 2005 per capita); $69,700 (ADLWD, 2004 family)	$67,562 (ACS 2005)	$56,560 (ACS 2005)
Southeast Fairbanks Census Area	$33,572 (BEA 2005 per capita); $29,613 (ADLWD 2004)		$61,900 (ADLWD 2004 family)
Delta Junction Area			
Big Delta	$14,803	$49,000	$53,125
Delta Junction	$19,171	$43,500	$58,250
Deltana	$18,446	$50,066	$53,021
Dry Creek	$7,779	$12,500	$10,000
Fort Greely	$12,368	$33,750	$32,969
Fairbanks Area			
Eilson AFB	$11,512	$35,938	$35,687
Ester	$29,155	$50,461	$73,750
Fairbanks	$19,814	$40,577	$46,785
Fox	$22,689	$51,176	$64,170
Harding/Birch Lakes	$24,438	$43,438	$60,288
Livengood	$21,215	$26,250	$26,250
Moose Creek	$17,980	$44,375	$44,018
North Pole	$21,426	$44,583	$54,583
Pleasant Valley	$18,633	$49,464	$41,719
Salcha	$22,616	$54,063	$61,563
Two Rivers	$24,351	$58,571	$58,661
Alaska Highway Area			
Tanacross	$9,429	$22,083	$31,250
Tetlin	$7,371	$12,250	$18,750
Tok	$18,521	$37,941	$49,219
Northway	$16,429	$59,375	$59,375
Northway Junction	$16,440	$67,500	$63,750
Northway Village	$10,300	$24,688	$26,875
Healy Lake	$18,128	$51,250	$53,750
Dot Lake	$19,406	$13,750	$62,500
Dot Lake Village	$7,476	$16,250	$16,667
Fortymile Area			
Alcan Border (Boundary)	$21,938	$65,000	$87,041

Town/Area	Per Capita Income	Household Income	Median Family Income
Central	$22,593	$36,875	$41,250
Chicken	$65,400	$66,250	None reported
Eagle	$20,221	$36,042	$44,375
Eagle Village	$13,886	$6,875	$31,250
Yukon River Area			
Beaver	$8,441	$28,750	$29,792
Birch Creek	$5,952	$11,250	$13,750
Chalkyitsik	$11,509	$16,250	$16,875
Circle	$6,426	$11,667	$11,250
Stevens Village	$7,113	$12,500	$11,563
Fort Yukon	$13,360	$29,375	$32,083
Source of data	Alaska Department of Community and Regional Affairs (ADCRA), unless otherwise noted		

Table 11.3. Local Government and Taxes in the Eastern Interior Planning Area

Town/Topic	Government	Taxes
Alaska		Tire fee, seafood development, tobacco, liquor, and O&G property tax
Anchorage	Unified Home Rule	Property, bed, liquor, and tobacco
Fairbanks North Star Borough	Second Class Borough	Property, bed, alcohol, tobacco, and O&G property tax
Southeast Fairbanks Census Area	Unincorporated	
Delta Junction Area		
Big Delta	Unincorporated	
Delta Junction	Second Class	
Deltana	Unincorporated	
Dry Creek	Unincorporated	
Fort Greely	Unincorporated	
Fairbanks Area		
Eilson AFB	Unincorporated	
Ester	Unincorporated	
Fairbanks	Home Rule	Property, bed, alcohol, and tobacco
Fox	Unincorporated	
Harding/Birch Lakes	Unincorporated	
Livengood	Unincorporated	
Moose Creek	Unincorporated	
North Pole	Home Rule	Property, sales
Pleasant Valley	Unincorporated	
Salcha	Unincorporated	
Two Rivers	Unincorporated	
Alaska Highway Area		
Tanacross	Unincorporated; Tribal	
Tetlin	Unincorporated; Tribal	
Tok	Unincorporated	
Northway	Unincorporated	
Northway Junction	Unincorporated	
Northway Village	Unincorporated; Tribal	
Healy Lake	Unincorporated; Tribal	
Dot Lake	Unincorporated	
Dot Lake Village	Unincorporated; Tribal	
Fortymile Area		
Alcan Border (Boundary)	Unincorporated	
Central	Unincorporated	
Chicken	Unincorporated	
Eagle	Second Class	
Eagle Village	Unincorporated: Tribal	
Yukon River Area		
Beaver	Unincorporated; Tribal	

Town/Topic	Government	Taxes
Birch Creek	Unincorporated; Tribal	
Chalkyitsik	Unincorporated; Tribal	
Circle	Unincorporated	
Stevens Village	Unincorporated; Tribal	
Fort Yukon	Second Class City; Tribal	3% sales tax
Source of data	Hadland 2008	

Table 11.4. Employment in the Eastern Interior Planning Area

Town/Area	Inter-relationships among producing sectors	Employment	Unemployment
Alaska	Recreation, mining, subsistence (applies to all locations)	Three largest Industry Sectors: Educational, health, social services; retail trade; and public administration	8.6% (ACS 2005)
Anchorage	Alaska Hub	Three largest Industry Sectors: Educational, health, social services; retail trade; and professional, scientific, management, administrative, and waste management services	7.8% (ACS 2005); 4.8% (ADLWD Aug 2007)
Fairbanks North Star Borough		Government, Military, including University provide >1/3 of employment. Gold mining and economic hub activities provide employment in the private sector.	6% (ACS 2005); 5.2% Nov. 2007
Southeast Fairbanks Census Area		Pogo Mine, government including military, provide the most jobs in the area.	8.9% Nov. 2007 (ADLWD)
Delta Junction Area			
Big Delta		Public Administration; mining; Transportation	24.7%
Delta Junction		Military; Government; mining; oil transportation	11.6%
Deltana		Military; Government; mining; oil transportation	12.8%
Dry Creek		Agriculture, service	0.0%
Fort Greely		Military	3.2%
Fairbanks Area			
Eilson AFB		Military, government, service	7.8%
Ester		Tourism, Mining	4.4%
Fairbanks		Military; retail trade; Education, health and social services; art, entertainment, recreation, accommodations, and food services.	10.9%
Fox		Employed most in Fairbanks	5.7%
Harding/Birch Lakes		Seasonal construction, highway work; commutes to Fairbanks and other locales	11.3%
Livengood		Government, construction	0.0%
Moose Creek		Government, construction, commute to other locations in the Fairbanks area.	8.9%

Town/Area	Inter-relationships among producing sectors	Employment	Unemployment
North Pole		S. Claus is largest employer-seasonally. As this is a suburb of Fairbanks, opportunity is similar to the city.	12.1%
Pleasant Valley		Most emplyed in Fairbanks area.	8.5%
Salcha		State government, university,constrcution, forestry	4.9%
Two Rivers		Diverse small businesses,	4.2
Alaska Highway Area			
Tanacross		Education, administrative, fire,	57.1%
Tetlin		Education, administrative, fire,	46.9%
Tok		Tok is the transportation, business, service and government center for the Upper Tanana region.	18.0%
Northway		Government related to airport, customs service; fire fighting, trapping	13.5%
Northway Junction		Government related to airport, customs service; fire fighting, trapping	6.3%
Northway Village		Education, administrative, medical clinic	31.8%
Healy Lake		Recreation, government	17.9%
Dot Lake		Dot Lake Lodge only	40.0%
Dot Lake Village		Education, administrative	0.0%
Fortymile Area			
Alcan Border (Boundary)		Public administration-Customs Service, transportation	0.0%
Central		Construction, Mining	13.8%
Chicken		Summer tourism	0.0%
Eagle		Education, tourism	14.3%
Eagle Village		Education, tourism, mostly seasonal business	56.7%
Yukon River Area			
Beaver		Public administration; education; transportation	17.9%
Birch Creek		Public administration; education	0.0%
Chalkyitsik		Public administration; education	0.0%
Circle		Government	24.0%
Stevens Village		Education, administrative, and fire	38.9%

Town/Area	**Inter-relationships among producing sectors**	**Employment**	**Unemployment**
Fort Yukon	Tourism growing	Government, tribal businesses, small air force site	18.0%
Source of data		Alaska Dept. of Workforce Development (ADWLD)	Alaska Dept. of Community and Regional Affairs (ADCRA)

11.3. Appendix C - Structure Protection Policy

BLM Alaska Structure Protection Policy

The following policy and procedures are meant to serve as guidance to the Alaska Fire Service (AFS) and the Alaska Division of Forestry (DOF), as appropriate, concerning cabin/structure protection priorities in relation to wildland fire monitoring and suppression activities on lands managed by the Bureau of Land Management in Alaska. Item 2 lists the protection priorities on BLM-managed lands. This policy recognizes that availability of resource may preclude protection of some sites indicated for protection during portions of the fire season.

1. The safety of the public and fire suppression personnel will remain the first priority when fire suppression/protection decisions are made.
2. The Bureau of Land Management (BLM) will provide protection of structures on Bureau lands using the following criteria in priority order: a) Regardless of the value of the cabin/structure, the protection and safety of human life will take precedence. This means that high value cabin/structures may not be protected if suppression puts human life at risk. Conversely, low value cabin/structures may be protected to ensure public safety. b) It is necessary to preserve structures to save human life due to an imminent threat of the structure(s) being burned over. c) If the structure has been evaluated and is on or has been determined to be eligible for the National Register of Historic Places. d) If the structure has not been evaluated for eligibility to the National Register of Historic Places, the Evaluating Structures for Historic Value process (attached below) will be initiated. e) Public funds have been expended in the construction and/or maintenance of the structure. These Federal facilities should receive protection commensurate with their monetary or resource management value as established by the Field Office Manager.
3. Field Offices will initiate the actions to reduce hazardous fuels adjacent to Federal facilities, structures that have been identified for protection.
4. The policy for unauthorized structures will be consistent with policy items 1-3 above.
5. Decisions made pursuant to this policy will be recorded on the fire map atlas. Keeping the fire maps current is a joint responsibility of the field office specialist, field office fire personnel, and the AFS/DOF fire management officers. Changes in fire maps should be initiated as part of the annual fire plan. Part of the annual review will be to re-evaluate any fire operations that included cabin/structure protection actions in the preceding year.

The Normal Situation

The current fire map atlas or an equivalent source will be kept updated with current information, including protection standards for structures based in part on an assessment of their historic value. Part of this historic assessment will be a determination of eligibility arrived in consultation with the State Historic Preservation Officer in exactly the same fashion as we do for other activities.

Sites will be designated for full protection unless they have been determined to be not eligible for the National Register.

In a Wildfire Situation

In a wildfire situation, it may be necessary to try to determine appropriate levels of protection for structures whose eligibility to the National Register has not been determined, or it may be

necessary to provide priorities among structures designated for full or critical protection. In those cases, the following process will be followed. All decisions that are based on this process will be documented and submitted to the Field Office Manager.

1. A qualified cultural resource specialist is available.

1.0. If at all possible[1] , a qualified cultural resource specialist will evaluate structures to determine if they appear to have sufficient historic value to warrant protection. The specialist will also try to assign relative value to multiple structures so that resources can be concentrated on the most important sites.

1.1. If time and circumstances allow, the cultural resource specialist will arrive at determinations of historic value only after an on-site visit to the structures involved.

1.2. If circumstances do not allow for an on-site visit by a cultural resource specialist, the determination will be made by the cultural resource specialist on the basis of the best available information.

1.2a. If AFS/DOF personnel can get to the site, they should try to obtain the following information for use by the cultural resource specialist:

- photograph(s) – digital or Polaroid images
- number of structures
- conditions of structures (collapsed, standing, ruin)
- construction materials (logs, plywood, sheet metal)
- associated features (bottle/can dumps, equipment)

1.2b. Use of a standard data gathering form, which would be available for fire personnel, is encouraged. This would greatly facilitate determinations of the historic value of structures and sites.

1.3. Once information has been gathered regarding structures involved in a wildfire situation, protection status and protection priorities will be made after communication with the State Historic Preservation Office (SHPO) if time and circumstances allow. Use of current technology may assist in this communication. (For example, digital images might be gathered and posted on a web page or transmitted via e-mail.)

1.3a. If circumstances do not allow for communication with the SHPO, a determination of historic value will be made by the cultural resource specialist.

2. A qualified cultural resource specialist is not available.

2.0. Historic evaluations will be made by the Field Office fire personnel.[2]

2.1. Training will be provided to the Field Office fire personnel to allow him/her to better make these evaluations. The details and extent of this training will be worked out by the FMO and the field archaeologists

3. If the Field Office Manager or their acting cannot be contacted

[1]If the home Field Office cultural resource specialist is not available, attempts will be made to contact a cultural resource specialist from another Field Office or the State Office to provide assistance.
[2]If the home Field Office fire personnel are not available, attempts will be made to contact the Field Office Manager or their acting.

3.0. If no other options are available, evaluations should be made by AFS/DOF personnel on site. The following is meant to provide some guidance in making these evaluations.

3.1. An older structure is probably more important than a younger one. Several characteristics of structures can be used to estimate relative age, such as the state of collapse; construction materials (logs vs. plywood); vegetation re-growth around the structure; and associated artifacts (wagon vs. 1934 Dodge)

3.2. A settlement, meaning a site with multiple dwelling structures, is probably more important than a single structure.

3.3. A site with a single dwelling structure and associated outbuildings, such as barns, sheds, outhouses or caches, is more important than an isolated structure.

3.4. A site with associated non-structural features, such as can or bottle dumps is probably more important than one without.

11.4. Appendix D: Fire Management Options for the Eastern Interior Planning Area

CRITICAL MANAGEMENT OPTION

Intent

The Critical management option was specifically created to give the highest priority to suppression action on wildland fires that threaten human life, inhabited property, designated physical developments and structural resources designated as National Historic Landmarks. Fires that threaten a critical site have priority over all other wildland fires. The fire management strategy under the Critical management option is to provide complete protection of the specific identified sites from fire. For clarification, a site referred to in this section could range from a single inhabited structure to an entire village or town.

Policy

Fires occurring in or immediately threatening this designation will receive highest priority for protection from wildland fires by immediate and continuing aggressive actions dependent upon the availability of suppression resources.

Objectives

1. Protect human life, inhabited property and designated physical developments without compromising firefighter safety. Protection of the aforementioned elements is the primary objective, not control of the wildland fire.
2. Limit damage to Critical sites from wildland fire.

Operational considerations

1. The Critical management option is restricted to designated sites or small areas made up of an aggregation of critical sites.
2. Place highest priority on the allocation of available suppression forces to fires threatening sites in this option.
3. Managers are encouraged to exercise restraint in designating physical developments for the Critical management option, limiting the application of this option to just those sites which are currently or routinely occupied as a dwelling.

Operational procedures

1. Preparedness

Land manager/owner(s) are required to identify each critical site.

2. Operations

Detection: Critical sites will receive maximum detection coverage.

Suppression response: Fire occurring within or immediately threatening a critical management site will receive the highest priority in allocation of initial attack resources. Protection of life or occupied property will have priority over National Historic Landmarks.

Notification requirements

1. Land manager/owner(s) will be contacted immediately when fire threatens a critical site.
2. When a fire escapes initial attack the affected land manager/owner(s) will be contacted immediately.
3. The completion of a Wildland Fire Situation Analysis (WFSA) is required if the fire escapes initial attack.

There are approximately 430,000 acres under Critical management option designation in the planning unit. The majority of these lands in this management option are in and around villages and the ownership is village and regional corporation.

FULL MANAGEMENT OPTION

Intent

This option was established for the protection of 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. Either broad areas or specific sites within a lower management option may be designated as Full Management.

Policy

Fires occurring within or immediately threatening this designation will receive aggressive initial attack dependent upon the availability of suppression resources.

Objectives

1. Control all wildland fires occurring within this management option at the smallest acreage reasonably possible on initial attack without compromising firefighter safety.
2. Protect sites or areas designated as Full management from the spread of wildland fires burning in a lower priority management option.
3. Minimize damage from wildland fires to the resources identified for protection within the Full management designation commensurate with values at risk.

Operational considerations

1. Only wildland fires within or threatening a Critical management area receive a higher priority for allocation of suppression resources.
2. Suppression tactics are selected after balancing suppression costs with the values identified for protection.

3. Structures on or eligible for inclusion on the National Register of Historic Places and non-structural sites on the National Register are placed within this category.
4. Suppression activities must be coordinated with land manager/owner(s) to develop tactical responses in sensitive areas, including cultural resource sites being excavated.

Operational procedures

1. Operations

Detection:

Lands designated in this management option will receive the maximum detection coverage available.

Suppression response:

1. Aggressively initial attack all fires occurring within or immediately threatening Full management areas with available forces.
2. Wildland fires occurring within or immediately threatening a full management area will receive priority for the allocation of initial attack resources after the protection of critical management area/site(s).
3. The suppression organization in conjunction with the affected land manager/owner(s) will determine the appropriate suppression action on fires that did not receive immediate initial attack and have grown beyond initial attack capabilities through the WFSA process.

Notification requirements

1. On wildland fires where initial attack is successful, the fire suppression organization will notify the affected land manager/owner(s) of these fires through normal briefing procedures.
2. If initial attack is not possible or when a wildland fire escapes initial attack and requires continued suppression efforts, the affected land manager/owner(s) will be contacted promptly.

Escaped Fire: The completion of the WFSA report is required if a fire escapes initial response, requires a significant change in suppression strategy or if suppression response is delayed beyond 24 hours from discovery.

There are approximately 2.8 million acres under Full Management Option designation in the planning unit. The majority of these lands surround critical management option areas near villages. The ownership of those lands is village and regional corporations.

LIMITED MANAGEMENT OPTION

Intent

This category recognizes areas where the cost of suppression may exceed the value of the resources to be protected, the environmental impacts of fire suppression activities may have more negative impacts on the resources than the effects of the fire, or the exclusion of fire may be detrimental to the fire dependent ecosystem. The Limited management option reduces both long-term suppression risks and costs by reducing the frequency of large fires that may burn

out of boundaries of Limited management regardless of the suppression effort. It also reduces current suppression costs and makes suppression goals more attainable in years of drought and intense fire activity. The Limited management option may also be chosen for areas where fire occurrence is essential to the biodiversity of the resources protected and the long-term ecological health of the land. Suppression actions may be initiated to keep a fire within the boundary of the management option or to protect identified higher value areas/sites. Site-specific areas that warrant higher levels of protection may occur within limited management areas. Appropriate suppression actions to protect these sites will be taken when warranted, without compromising the intent of the limited management area.

Policy

Wildland fires occurring within this designation will be allowed to burn under the influence of natural forces within predetermined areas while continuing protection of human life and site-specific values within the management option. Generally this designation receives the lowest priority for allocations of initial attack resources; however, surveillance may be a high priority.

Objectives

1. Conduct periodic surveillance of fires within the management option to evaluate threats to sites assigned higher management levels, and assess the potential for escape from the Limited management area. Surveillance also provides land manager/owner(s) and suppression organizations with information on fire behavior, environmental conditions, fire weather, actual and potential fire growth to assist with management decisions and provide accurate information to the general public.
2. An immediate threat from a wildland fire in Limited to Critical, Full or Modified (before conversion date) management areas may receive an initial attack response if suppression forces are available. The land manager/owner(s) will be notified immediately, preferably before actions are taken, but actions will not be delayed for notification due to the imminent threat. The reasons for the action will be documented in writing, provided to the land manager/owner(s), and maintained in the fire record.
3. When a suppression action other than surveillance is needed because of a potential long-term threat to a higher management option, the fire suppression organization and the affected and adjacent land manager/owner(s) will jointly prepare a WFSA. The selected suppression alternative must be approved by land manager/owner(s).
4. Unless designated for protection by the land manager/owner, abandoned structures that are not eligible for inclusion on the National Register of Historic Places will be given the same level of protection as the surrounding lands.

Operational procedures

1. Operations

Detection:

Designated lands will receive detection effort commensurate with available detection resources and fire conditions. Additional detection will be provided when requested by individual agencies consistent with availability of detection resources and conditions.

Suppression response:

1. If a suppression action in the Limited management option is necessary, low impact or indirect suppression methods will be used wherever possible.
2. Suppression responses on fires within the Limited management option will receive the priority for allocation of resources equivalent to the standard of protection given to the area/site to be protected. For example, if an action on a fire within the Limited management option is an attempt to keep the fire from burning into a Full management area, the priority for suppression resources allocation should be commensurate with that given to a full management area.

Notification Requirements

1. The land manager/owner(s) will be notified through normal briefing procedures of all wildland fires detected and their subsequent status.
2. If a wildland fire threatens to burn out of the option boundary or requires a suppression action, the land manager/owner(s) will be contacted immediately.

Surveillance:

1. The fire suppression organization will maintain the surveillance responsibilities on wildland fires while they are burning. Joint surveillance may be conducted when situations warrant or the land manager/owner(s) wishes to implement their own surveillance/fire effects monitoring procedures.
2. Any flights within the vicinity of an active fire, particularly fires with ongoing suppression actions, should be coordinated with the appropriate fire suppression dispatch office.
3. Routine surveillance will be performed and documented until resources are dispatched or the fire is declared out. Surveillance frequency will be determined by the suppression organization or in coordination with land manager/owner(s). This information will be used to update or revise the WFSA when necessary.
4. Surveillance responsibilities include:
   a. 1-3 day weather forecast.
   b. A local area weather summary including precipitation, drought indices, and fire danger indices.
   c. A map of the fire which may include the following: fire perimeter, location, topography, fuel type(s), natural barrier locations and areas of special concern such as potential threats to higher management options or other resources requiring protection.
   d. Fire behavior, including estimated rate of forward spread, direction of spread, estimated flame lengths, description of fire (i.e., crowning, ground fire, surface fire), and spotting activity (including distance).
   e. Smoke behavior, including estimated plume height and direction of movement.
   f. General weather forecast.
5. Projection of fire perimeter a. Information obtained from the suppression organization and the fire site may be used to predict the fire perimeter at the close of the next 24-hour period if requested by land manager/owner(s). Using this information the land manager/owner(s) and the fire suppression organization will determine if a WFSA should be prepared to determine an appropriate suppression in response to changing conditions. b. Information and analysis will be documented to provide a chronological administrative history of the fire.

Escaped Fire:

A WFSA will be completed if a wildland fire threatens to cross the Limited management boundary and requires a suppression response (excluding Operational Considerations), or if a significant change in suppression strategy is needed.

There are approximately 22.8 million acres in the Limited management option designation in the planning unit.

MODIFIED MANAGEMENT OPTION

Intent

The Modified management option is intended to be the most flexible option available to land managers/owners. The intent of the Modified management option is to provide a higher level of protection when fire danger is high, probability of significant fire growth is high, and probability of containment is low. A lower level of protection is provided when fire danger decreases, potential for fire growth decreases and the probability of containment increases. This option should reduce commitment of suppression resources when risks are low. This option also provides increased flexibility in the selection of suppression strategies when risks are high. The Modified option provides a management level between Full and Limited. Unlike Full management areas, the intent is not to minimize burned acres, but to balance acres burned with suppression costs and to accomplish land and resource management objectives. As stated in the original Alaska Interagency Fire Management Plan, Tanana/Minchumina Planning Area, "Lands placed in this category will usually be suited to indirect attack." The essential elements of this option are the evaluation and conversion dates, described below, and the WFSA process.

Evaluation and Conversion Dates

Standardized evaluation dates will be established for the Modified management option areas based on an assessment of the values to be protected and the historical seasonal fire occurrence. Evaluation dates serve as guidelines and are intended to be flexible enough to adjust suppression actions when weather conditions or fire activity appreciably change. The evaluation dates will be recorded on the map atlases.

The Alaska Wildland Fire Coordination Group (AWFCG) is responsible for the adjustment, either later or earlier to the evaluation/conversion date for Modified management option areas. An individual may request, through an AWFCG representative, that the AWFCG consider an earlier evaluation date during unusually wet fire seasons or postpone the evaluation date during unusually dry fire seasons. The individual desiring the change must inform land manager/owners potentially affected by the proposed change and solicit their opinion. The Area Forester or Zone FMO may facilitate this process. The individual must provide the AWFCG representative a written rationale with supporting data for the change as well as the opinions of affected land manager/owners. The written rationale and supporting data will be included with the AWFCG decision record. If the conversion date is postponed, the AWFCG will reconsider a new evaluation date at intervals no longer than 10-days until conversion takes place. Unless altered by the AWFCG, the evaluation date becomes the conversion date and the Modified management option automatically converts to Limited management option.

If the AWFCG decides to convert the Modified management option area(s), the changes are communicated in writing to land manager/owner(s) and suppression organizations through their

AWFCG representatives and to the general public through media releases coordinated through the Alaska Incident Coordination Center (AICC)

Policy

Fires occurring within this designation, before the conversion date, will receive initial attack, dependent upon availability of suppression resources, unless otherwise directed by the land manager/owner(s) and documented by a WFSA . After the conversion date, the default action for all fires occurring within the Modified management option areas will be routine surveillance to ensure that identified values are protected and that adjacent higher priority management areas are not compromised. Critical and Full management areas are higher priorities for suppression resources than Modified management areas.

Objectives

1. Reduce overall suppression costs with minimum resource commitment without compromising firefighter safety.
2. Within land manager/owner policy constraints, provide opportunities for wildland fire to help achieve land and resource management objectives.

Operational Considerations Before Conversion Date:

1. If a wildland fire escapes initial attack, the fire suppression organization and the manager/owner will prepare a WFSA to determine the appropriate suppression response.
2. Suppression tactics are selected based upon balancing of suppression costs with values identified for protection and to accomplish land and resource management objectives.
3. Evaluation dates will be identified on the map atlas.
4. Unless designated for protection by the land manager/owner, abandoned structures that are not eligible for inclusion on the National Register of Historic Places will be given the same level of protection as the surrounding lands.

Operational Considerations After Conversion Date:

1. An immediate threat from a fire in Modified to an area in Critical or Full management option will receive an initial attack response if suppression forces are available. The land manager/owner(s) will be notified immediately, preferably before actions are taken. Actions, however, will not be delayed for notification due to the imminent threat. The reasons for the action will be documented in writing, maintained in the fire record and identified in the situation report.
2. Unless designated for protection by the land manager/owner, abandoned structures that are not eligible for inclusion on the National Register of Historic Places will be given the same level of protection as the surrounding lands.

Operational procedures

1. Operations

Detection:

1. Before the conversion date, designated lands will receive detection coverage with available detection resources.

2. Suppression response:
3. Before the conversion date, all wildland fires will receive initial attack with available resources. Fire containment is the primary objective.
4. Fires occurring within a Modified management area will receive priority for allocation of initial attack resources after the protection of Critical management site(s) and Full management areas from existing fires or new starts anticipated imminently in Critical or Full management areas.
5. The suppression organization, in conjunction with the affected land manager/owner will determine, through the WFSA process, the appropriate suppression action on fires that did not receive immediate initial attack and have grown to a size that initial attack is not feasible.
6. Any suppression action that is under way when the conversion date is reached may continue to completion with the approval of the land manager/owner(s).

Notification requirements:

1. On wildland fires where initial attack is successful, the fire suppression organization will notify the affected land manager/owner(s) of these fires through normal briefing procedures.
2. When a wildland fire escapes initial attack and requires continued suppression efforts or if initial attack cannot be initiated, the affected land manager/owner(s) will be contacted immediately.
3. The land manager/owner(s) will be notified immediately if suppression actions are initiated after the conversion date, otherwise the status of the wildland fires will be communicated through usual briefing procedures.

Surveillance: See Surveillance section in the Limited Management Option.

There are approximately 2.7 million acres under Modified Management Option designation in the planning unit.

11.5. Appendix E: Water Quality Standards

The following table lists the Alaska Department of Environmental (ADEC) water quality standards for fresh water uses. The complete regulation and the notes referred to in the table are available on the ADEC Web Page at: http://www.dec.state.ak.us/water/wqsar/wqs/pdfs/18%20AAC_70_WQS_Amended_July_1_2008.pdf

Water Quality Standards for Designated Uses **ADEC Water Quality Standards (18 AAC 70), amended as of July 1, 2008**	
POLLUTANT & WATER USE	**CRITERIA**
(1) COLOR, FOR FRESH WATER USES (See note 8)	
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed 15 color units or the natural condition, whichever is greater.
(B) Water Recreation (i) contact recreation	Same as (1)(A)(i).
(B) Water Recreation (ii) secondary recreation	May not interfere with or make the water unfit or unsafe for the use.
(2) FECAL COLIFORM BACTERIA (FC), FOR FRESH WATER USES (See note 1)	
(A) Water Supply (i) drinking, culinary, and food processing	In a 30-day period, the geometric mean may not exceed 20 FC/100 ml, and not more than 10% of the samples may exceed 40 FC/100 ml. For groundwater, the FC concentration must be less than 1 FC/100 ml, using the fecal coliform Membrane Filter Technique, or less than 3 FC/100 ml, using the fecal coliform most probable number (MPN) technique.
(B) Water Recreation (i) contact recreation	In a 30-day period, the geometric mean of samples may not exceed 100 FC/100 ml, and not more than one sample, or more than 10% of the samples if there are more than 10 samples, may exceed 200 FC/100 ml.
(B) Water Recreation (ii) secondary recreation	In a 30-day period, the geometric mean of samples may not exceed 200 FC/100 ml, and not more than 10% of the total samples may exceed 400 FC/100 ml.
(3) DISSOLVED GAS, FOR FRESH WATER USES	

Water Quality Standards for Designated Uses ADEC Water Quality Standards (18 AAC 70), amended as of July 1, 2008	
POLLUTANT & WATER USE	**CRITERIA**
(A) Water Supply (i) drinking, culinary, and food processing	Dissolved oxygen (D.O.) must be greater than or equal to 4 mg/l (this does not apply to lakes or reservoirs in which supplies are taken from below the thermocline, or to groundwater).
(B) Water Recreation (i) contact recreation	Dissolved oxygen (D.O.) must be greater than or equal to 4 mg/l (this does not apply to lakes or reservoirs in which supplies are taken from below the thermocline, or to groundwater).
(B) Water Recreation (ii) secondary recreation	Dissolved oxygen (D.O.) must be greater than or equal to 4 mg/l (this does not apply to lakes or reservoirs in which supplies are taken from below the thermocline, or to groundwater).
(4) DISSOLVED INORGANIC SUBSTANCES, FOR FRESH WATER USES	
(A) Water Supply (i) drinking, culinary, and food processing	Total dissolved solids (TDS) from all sources may not exceed 500 mg/l. Neither chlorides nor sulfates may exceed 250 mg/l.
(B) Water Recreation (i) contact recreation	Not applicable.
(B) Water Recreation (ii) secondary recreation	Not applicable.
(5) PETROLEUM HYDROCARBONS, OILS AND GREASE, FOR FRESH WATER USES	
(A) Water Supply (i) drinking, culinary, and food processing	May not cause a visible sheen upon the surface of the water. May not exceed concentrations that individually or in combination impart odor or taste as determined by organoleptic tests.
(B) Water Recreation (i) contact recreation	May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils.

Water Quality Standards for Designated Uses **ADEC Water Quality Standards (18 AAC 70), amended as of July 1, 2008**	
POLLUTANT & WATER USE	**CRITERIA**
(B) Water Recreation (ii) secondary recreation	May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils.
(6) pH, FOR FRESH WATER USES (variation of pH for water naturally outside the specified range must be toward the range)	
(A) Water Supply (i) drinking, culinary, and food processing	May not be less than 6.0 or greater than 8.5.
(B) Water Recreation (i) contact recreation	May not be less than 6.5 or greater than 8.5. If the natural condition pH is outside this range, substances may not be added that cause an increase in the buffering capacity of the water.
(B) Water Recreation (ii) secondary recreation	May not be less than 5.0 or greater than 9.0.
(7) RADIOACTIVITY, FOR FRESH WATER USES	
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed the concentrations specified in Table I of the Alaska Water Quality Criteria Manual (see note 5) for radioactive contaminants and may not exceed limits specified in 10 C.F.R. 20 (see note 9) and National Bureau of Standards, Handbook 69 (see note 10).
(B) Water Recreation (i) contact recreation	May not exceed the concentrations specified in Table I of the Alaska Water Quality Criteria Manual (see note 5) for radioactive contaminants and may not exceed limits specified in 10 C.F.R. 20 (see note 9) and National Bureau of Standards, Handbook 69 (see note 10).
(B) Water Recreation (ii) secondary recreation	May not exceed the concentrations specified in Table I of the Alaska Water Quality Criteria Manual (see note 5) for radioactive contaminants and may not exceed limits specified in 10 C.F.R. 20 (see note 9) and National Bureau of Standards, Handbook 69 (see note 10).
(8) RESIDUES, FOR FRESH WATER USES: Floating solids, debris, sludge, deposits, foam, scum, or other residues (criteria are not applicable to groundwater) (See note 13)	

Water Quality Standards for Designated Uses ADEC Water Quality Standards (18 AAC 70), amended as of July 1, 2008	
POLLUTANT & WATER USE	**CRITERIA**
(A) Water Supply (i) drinking, culinary, and food processing	May not, alone or in combination with other substances, be present in concentrations or amounts that: form objectionable deposits; constitute a nuisance; produce objectionable odor or taste; or result in undesirable or nuisance species.
(B) Water Recreation (i) contact recreation	May not, alone or in combination with other substances, be present in concentrations or amounts that: form objectionable deposits; constitute a nuisance; produce objectionable odor or taste; or result in undesirable or nuisance species.
(B) Water Recreation (ii) secondary recreation	May not, alone or in combination with other substances, be present in concentrations or amounts that: form objectionable deposits; constitute a nuisance; produce objectionable odor or taste; or result in undesirable or nuisance species.
(9) SEDIMENT, FOR FRESH WATER USES (criteria are not applicable to groundwater)	
(A) Water Supply (i) drinking, culinary, and food processing	No measurable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method (see note 11).
(B) Water Recreation (i) contact recreation	No measurable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method (see note 11).
(B) Water Recreation (ii) secondary recreation	May not pose hazards to incidental human contact or cause interference with the use.
(10) TEMPERATURE, FOR FRESH WATER USES	
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed 15° C.
(B) Water Recreation (i) contact recreation	May not exceed 30° C.
(B) Water Recreation (ii) secondary recreation	Not applicable.

Water Quality Standards for Designated Uses **ADEC Water Quality Standards (18 AAC 70), amended as of July 1, 2008**	
POLLUTANT & WATER USE	**CRITERIA**
(11) TOXIC AND OTHER DELETERIOUS ORGANIC AND INORGANIC SUBSTANCES, FOR FRESH WATER USES	
(A) Water Supply (i) drinking, culinary, and food processing	The concentration of substances in water may not exceed the criteria shown in Table I and in Table V, column A of the Alaska Water Quality Criteria Manual (see note 5).
(B) Water Recreation (i) contact recreation	The concentration of substances in water may not exceed the criteria shown in Table I of the Alaska Water Quality Criteria Manual (see note 5).
(B) Water Recreation (ii) secondary recreation	Concentrations of substances that pose hazards to incidental human contact may not be present.
(12) TURBIDITY, FOR FRESH WATER USES (criteria are not applicable to groundwater)	
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed 5 nephelometric turbidity units (NTU) above natural conditions when the natural turbidity is 50 NTU or less, and may not have more than 10% increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 25 NTU.
(B) Water Recreation (i) contact recreation	May not exceed 5 NTU above natural conditions when the natural turbidity is 50 NTU or less, and may not have more than 10% increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 15 NTU. May not exceed 5 NTU above natural turbidity for all lake waters.
(B) Water Recreation (ii) secondary recreation	May not exceed 10 NTU above natural conditions when natural turbidity is 50 NTU or less, and may not have more than 20% increase in turbidity when the natural turbidity is greater than 50 NTU, not to exceed a maximum increase of 15 NTU. For all lake waters, turbidity may not exceed 5 NTU above natural turbidity.

11.6. Appendix F White Mountains Recreation Management Plan

The following table lists program actions proposed in the Recreation Activity Management Plan for the White Mountains National Recreation Area (BLM 1988) and the status of those program actions.

Table 11.5. Recreation Program and Travel Management Actions from the Recreation Activity Management Plan for the White Mountains

Program Action	Com-pleted Yes/No	Comments
Trail System		
Windy Creek Trail: Beaver Creek to Windy Gap Cabin.	Yes	
Fossil Creek Trail: Borealis Cabin to Windy Gap Cabin.	Yes	
Beaver Creek Trail: Windy Creek to Fossil Creek.	Yes	Called Fossil Gap Trail
Upper Fossil Creek Trail: Windy Gap Cabin to O'Brien Creek Trail	Yes	Called Cache Mountain Loop Trail
Moose Creek Trail: Moose Creek Cabin to White Mtns. Trail Shelter	Yes	White Mtns. shelter is called Wickersham Trail Shelter
Ridge Trail: Borealis Cabin to Colorado Creek Cabin	Yes	Called Big Bend Trail
Trail Creek Trail: maintain existing trail	Yes	
Summer Trail: reroute section near Beaver Creek	No	Called Summit Trail. Final section near Beaver Creek is not completed, but is paralleled by the winter trail which is passable on foot
Winter Trail: reroute first 1.5 miles	Yes	Called Wickersham Creek Trail
Connecting Trail: White Mountain (WM) Summer Trail to WM Winter Trail	Yes	Old trail was from Mile 23.5 Elliott Highway. Connection is From Mile 28 of the Elliott Highway and the Ski Loop from Summit Trail to Wickersham Creek Trail.
Colorado Creek Trail: Tolovana Bridge to Beaver Creek.	Yes	
O'Brien Creek Trail: Beaver Creek to Upper Fossil Creek Trail, existing.	Yes	Beaver Creek to Cache Mtn. cabin is Trail Creek Trail, and Cache Mtn. towards Windy Gap cabin is Cache Mtn. Loop Trail.
Beaver Creek Route: Trail Creek to Borealis Cabin, packing only.	No	Route downriver from Nome Creek. Extensive project with multiple pitfalls, to this point has been deemed unfeasible.

Program Action	**Com-pleted Yes/No**	**Comments**
McKay Creek Trail: Steese Hwy. to Nome Creek.	Yes	Trail completed and in use primarily as a winter trail, however U.S. Creek Road and Nome Creek Road made McKay Creek as a road access to Nome Creek, and is redundant. Steese Hwy to 7 mile is McKay Cr and from 7 mi to Nome Creek is Lower Nome Creek Tr.
O'Brien Creek cut-off: McKay Creek Trail to O'Brien Creek.	Yes	Called McKay Creek Trail
Champion Creek Trail: Nome Creek to Champion Creek.	No	Made redundant by Quartz Creek Trail
Quartz Creek Trail: Champion Creek to Bear Creek via Quartz Creek (no motorized vehicle use).	Yes	Completed to a different capacity. Multiple use trail. Not constructed to Bear Creek.
Sled Rock Trail: Nome Creek to Sled Rock (summer hiking)	No	Inventoried and found to be unfeasible
Mt. Prindle Trail: Nome Creek to Mt. Prindle (summer hiking)	No	Inventoried and given much consideration. A route exists. Improvements needed for the first few miles.
Tabletop Mtn. Trail: Nome Creek to Tabletop Mtn. (summer hiking)	Yes	Ongoing improvements by BLM and Student Conservation Association trail crews.
Bear Creek Trail: Nome Creek to Quartz Creek via Bear Creek.	No	Exists from Nome Creek to Richard's Cabin. The rest made redundant by direct access to Quartz Cr. from Nome Creek via Quartz Creek Trail.
Public Recreation Cabins		
Construction Specifications	Yes	
O'Brien Creek Trail Shelter	No	Cache Mountain Cabin constructed
Fossil Creek Trial Shelter	No	Caribou Bluff Cabin constructed
Windy Creek Trail Shelter	No	Wolf Run and Windy Gap Cabin constructed
Trail Creek Cabin	Yes	Called Moose Creek Cabin
Bear Creek Cabin	No	Richards Cabin constructed
Quartz Creek Cabin	No	
Ophir Ridge Trail Shelter	No	
Little Champion Creek Trail Shelter	No	
Other		Lee's, Eleazar's, Borealis-LeFevre, Moose Creek, Colorado Creek, and Blixt cabins constructed. Wickersham Creek Trail and Summit Trail shelters constructed.
Access		
Nome Creek Road	Yes	
Victoria Creek Airstrip	No	Found infeasible to construct and maintain this airstrip to acceptable liability risk levels.
Other Facilities		

Program Action	Com-pleted Yes/No	Comments
White Mtns. Trailhead	Yes	Called Wickersham Dome, Mile 20 Elliott Highway
McKay Creek	Yes	Mile 42 of the Steese Highway.
Colorado Creek (maintenance only)	Yes	Trailhead reconstructed by ADOT on east side of highway for safer access to trail.
Nome Creek Improvements (includes trailheads)	Yes	Ongoing.
Off-Road Vehicle Designations		
Implement RMP decisions by publishing closures	Yes	Established Primitive, Semi-Primitive Motorized, Research Natural Areas, 1500 pound GVRW limitation, Beaver Creek National Wild River non-motorized corridor, non-motorized Summit Trail and Ski Loop
Visitor Information		
Develop the following brochures: Beaver Creek NWR, Off-Road Vehicle (OHV)Use, Cabin program, winter trails, summer trails, general wildlife, man's pre-historic and historic use of the area, and history of mining.		Brochures were developed for Beaver Creek NWR, OHV use, and the cabin program and winter trails. Wildlife and Human Use brochures have not been developed. Mining history is included in Nome Creek interpretive displays.
Develop interpretive displays at the Public Lands Information Center and the BLM Office.	Yes	These displays are in place.
Develop a Visitor Information Management Handbook	No	
Publish a color brochure and map to provide overview of recreational resources	Yes	
Develop a comprehensive signing program	Yes	Sign specifications have been developed.
Develop interpretive displays at Nome Creek	Yes	Includes mining history.

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