NATIONAL CONSERVATION LANDS

April 2024

Birch Creek Wild and Scenic River

Final Comprehensive River Management Plan

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Introduction

Background

The Birch Creek Wild and Scenic River (WSR) was designated by the Alaska National Interest Lands Conservation Act of 1980 (ANILCA) on December 2, 1980. The Bureau of Land Management (BLM) Eastern Interior Field Office (EIFO) managed the WSR according to the 1983 River Management Plan for the Birch Creek WSR (BLM 1983).

Federal agencies charged with the administration of the National Wild and Scenic Rivers System (NWSRS) are required to prepare a comprehensive river management plan (CRMP) for designated river segments under the Wild and Scenic Rivers Act of 1968 (WSRA), Section 3(d)(1). With this CRMP, the BLM EIFO is updating and superseding the 1983 River Management Plan. This update incorporates the provisions of several federal regulations promulgated since the adoption of the 1983 River Management Plan. The CRMP also considers conditions in the Birch Creek WSR Corridor that have changed since 1983. Finally, the CRMP also address EIFO planning efforts since 1983 that relate to activity in the Birch Creek WSR Corridor.

The primary goal of this CRMP is to provide management direction for protecting and enhancing the river values for Birch Creek. The CRMP will more clearly document the river corridor boundary with enhanced mapping. It also will establish management direction, user capacities, monitoring, and other management practices necessary to protect and enhance the river values (the river's free-flowing condition, water quality, and outstandingly remarkable values [ORVs]).

The Birch Creek WSR is a 111.14-mile portion of the Ikhèenjik River. The name Birch Creek was given to the subject stream in the mid-1800s by traders of the Hudson's Bay Company at Fort Yukon. Birch Creek was the official name used by the US government for the entire river until 1980, when ANILCA established the Birch Creek WSR on a portion of the 341.93-mile-long stream. On March 9, 2017, the US Board on Geographic Names changed the official name of the entire stream to "Ikhèenjik River" in recognition of its Gwich'in name. That renaming of the stream did not change the name of the congressionally designated WSR. In this document, "Birch Creek WSR" is used to refer to the designated WSR, the surrounding corridor, and the watershed that drains into the corridor. "Ikhèenjik River" is used to refer to the stream as a whole and the watershed that drains into it.

The Birch Creek WSR was designated under ANILCA. The original estimate of its length in the 1983 River Management Plan was 126 miles. More recently, using current geographic information system tools and the USGS National Hydrography Dataset, the centerline for the Birch Creek WSR was determined to be 111.14 miles. This does not include all braided sections of the Birch Creek WSR.

The WSRA mandates that each component of the NWSRS be managed to protect and enhance the values that caused it to be included in the system. No explicit list of values is provided in the designating legislation for the Birch Creek WSR. However, the legislation was informed by a 1975 environmental impact statement (EIS; US Department of the Interior 1975). Excerpts from that EIS give a clear sense of why Birch Creek was included in the system, as well as what made it suitable for a wild classification rather than a scenic or recreational classification. While these are not binding for the CRMP, the description of the river values at the time and the assumptions

made about management needed to protect those values provide informative context for the current CRMP development.

Purpose of the Birch Creek CRMP

The Birch Creek CRMP will establish the overall management direction for the Birch Creek WSR. It will establish management direction to protect and enhance the ORVs, free-flowing condition, and water quality for the designated WSR, leaving it unimpaired for future generations. The Birch Creek WSR has scenic, recreation, and fisheries ORVs. In addition, the Birch Creek WSR is designated as wild because it is free of impoundments; it is generally inaccessible, except by trail; and the watersheds and shorelines are essentially primitive.

The purpose of the Birch Creek CRMP is to implement the direction of the WSRA. The WSRA states each component of the NWSRS shall be administered in such a manner as to protect and enhance the values that caused it to be included in the NWSRS. Management plans for any such component may establish varying degrees of intensity for the protection and development, based on the special attributes of the area.

The CRMP will establish a detailed river corridor boundary and describe existing resource conditions, including a detailed description of the ORVs. It will define goals and desired conditions for protecting the river values, address resource protection and development of lands and facilities, address user capacities, and address water quality issues and instream flow requirements. CRMP development involves a collaborative approach that is coordinated with—and may be incorporated into—resource management planning for affected adjacent federal lands. The CRMP is prepared after consultation with Tribes, state and local governments, and the interested public. Also, the CRMP will identify the regulatory authorities of other governmental agencies that assist in protecting river values, and it will include a monitoring strategy to maintain desired conditions. If managers determine that action is needed to maintain or enhance these values, additional environmental review may be required at that time.

The documentation and analysis that support and expand on the information contained in this management plan include:

- Birch Creek Wild and Scenic River Comprehensive River Management Plan and Environmental Assessment Scoping Summary Report (October 2023)
- Final Comprehensive River Management Plan and Environmental Assessment
- Finding of No Significant Impact Statement for Birch Creek Comprehensive River Management Plan

Planning Context

Wild and Scenic Rivers Act

The WSRA was passed in 1968 with the goal of preserving free-flowing rivers with outstanding natural, cultural, and recreational values. The WSRA is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. Section 3(d)(1) of the WSRA requires the federal agency overseeing the designated WSR to prepare a CRMP to provide protection for the river's values. The CRMP must address resource protection, development of lands and facilities, user capacities, and other management practices necessary or desirable to achieve the purposes of the WSRA. The CRMP must be coordinated with, and may be incorporated into, resource management planning for

affected adjacent federal lands. In addition, the CRMP is prepared after consultation with Tribes, state and local governments, and interested parties.

In accordance with Section 7 of the WSRA, the BLM, as the managing agency of the Birch Creek WSR, is required to make determinations regarding the impacts of proposed water resources projects on congressionally designated WSRs when projects are proposed by another federal agency. Section 8(a) states that all public lands within the authorized boundaries of any component of the NWSRS that is designated in Section 3 of the WSRA, or which is hereafter designated for inclusion in that system, are hereby withdrawn from entry, sale, or other disposition under the public lands laws of the United States. Section 10(b) of the WSRA requires that the administering agency protect and enhance the values for which the river was designated (water quality, free-flowing condition, and ORVs).

Alaska National Interest Lands Conservation Act

The ANILCA designated 100 million acres of federal land in Alaska as new or expanded conservation system units. These conservation units include national parks and preserves, national wildlife refuges, designated wilderness areas, and WSRs. The ANILCA specifically designated the 1.2 million-acre Steese National Conservation Area (NCA) to protect the area's special values within the framework of a program of multiple use and sustained yield and for the maintenance of environmental quality. It also classified a segment of Birch Creek as a wild river pursuant to the WSRA. According to the WSRA, a wild river is "a river or segment of a river that is free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America."

The ANILCA established the upper portion of Birch Creek as a component of the NWSRS to be administered by the Secretary of the Interior through the BLM. Subject to prior existing rights, the ANILCA designated Birch Creek as a WSR. The ANILCA also directed the Secretary of the Interior to establish detailed boundaries, prepare a management and development plan, and present this information to Congress by December 2, 1983. In response to this directive, the 1983 River Management Plan was developed, and it established the detailed boundaries and management policies for Birch Creek.

ANILCA, Title VIII, Section 810 (Public Law 96-487), subtitled Subsistence and Land Use Decisions, outlines the requirements for addressing impacts on subsistence uses of resources in the federal land use decision-making process in Alaska. An ANILCA Section 810 Evaluation is required for any decision to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands under any provision of law authorizing such actions.

Omnibus Public Lands Management Act

The Omnibus Public Lands Management Act of 2009 created the National Landscape Conservation System (NLCS) "to conserve, protect, and restore nationally significant landscapes with outstanding cultural, ecological, and scientific values for the benefit of current and future generations." It made all BLM-administered WSRs, including the Birch Creek WSR, components of the NLCS, and subject to policy in BLM Manual 6100, NLCS Management Manual, to the extent the policy is consistent with the ANILCA.

1983 River Management Plan for Birch Creek WSR

The 1983 River Management Plan is the original guiding management document for the Birch Creek WSR, as directed by the ANILCA. While ORVs were not identified through the 1983 River Management Plan, management actions included the WSR corridor and provided a blanket level of protections to resources that contributed to the designation. Management objectives included protecting valid existing rights and future rights granted pursuant to appropriate federal and state laws; preserving the Birch Creek WSR and its immediate environment in a natural, primitive condition; preserving its free-flowing condition; protecting water quality; providing a high-quality primitive recreational opportunity; providing opportunities for interpretive, scientific, educational, and wildlands-oriented uses; assuring protection of historic and ecological values; and maintaining and improving fish and wildlife habitats.

This CRMP is intended to replace the 1983 River Management Plan, providing updated management objectives for protecting and enhancing the free-flowing condition, water quality, and since-identified ORVs of the Birch Creek WSR.

Steese Record of Decision and Approved Resource Management Plan

The 2016 Steese Record of Decision (ROD) and Approved Resource Management Plan (RMP) covers the Steese planning area, which includes approximately 1,267,000 acres of BLM-administered land in Alaska's Eastern Interior. This overarching RMP developed goals, objectives, land use allocations, and management actions for natural resources within the Steese NCA. The RMP included decisions on revising or amending the 1983 River Management Plan to better protect the Birch Creek WSR and achieve the goals of the WSRA. It also identified ORVs for the Birch Creek WSR. Scenery, recreation, and fisheries were determined to be the ORVs and thus were identified as the Birch Creek WSR's ORVs.

BLM special status species include species listed under the Endangered Species Act and species that are designated as BLM Alaska sensitive species by the BLM state director. BLM Manual 6840 outlines the management of these species and their habitats, where they are found on BLM-administered lands. The BLM's emphasis of special status species management is an ecosystem management approach that attempts to reduce the likelihood that any native species would be elevated to BLM sensitive species status. Additionally, this approach initiates proactive conservation measures that reduce or eliminate threats to existing BLM Alaska sensitive species to minimize the likelihood of a species being listed under the Endangered Species Act. Listed species can be found in the 2016 Eastern Interior RMP and EIS.

Approved Travel Management Plan for the Steese Travel Management Area

As stated in the Steese Travel Management Plan (TMP), the Steese Travel Management Area is north of Fairbanks, Alaska. It is situated both north and south of the Steese Highway. It is adjacent to the Yukon Flats National Wildlife Refuge, Yukon-Charley Rivers National Preserve, White Mountains National Recreation Area, and State lands.

The Steese NCA is a component of the BLM's NLCS. The mission of the NLCS is to conserve, protect, and restore nationally significant landscapes recognized for their outstanding cultural, ecological, and scientific values. The Birch Creek WSR starts and ends outside the Steese NCA.

It is managed according to the WSRA with limits to access and transportation identified in the Steese TMP. During the summer, the Birch Creek WSR Corridor is closed to unpermitted OHVs (that is, no summer cross-country OHV use). During the winter, OHV cross-country travel is allowed for snowmobiles that are 1,000 pounds curb weight or less and a maximum of 50 inches in width. All other OHVs are limited to managed routes if present (BLM 2022a). These limitations do not apply to the use of snowmobiles, motorboats, and airplanes for traditional activities and travel to and from villages and homesites, per Section 1110 of ANILCA and implemented through regulations at 43 Code of Federal Regulations (CFR) 36.

Federal Subsistence Management Program

ANILCA Title VIII establishes a framework for management of subsistence activities on federal public lands in Alaska. The BLM is required by the ANILCA to consider the management alternatives' potential impacts on subsistence activities, subsistence resources, or access to subsistence activities. Section 810 of ANILCA outlines the requirements for addressing impacts on subsistence uses of resources in the decision-making process for federal land use in Alaska. Appendix J of the 2016 Eastern Interior RMP and EIS includes the evaluations and findings within the Steese Subunit of the planning area, per Section 810(a) of ANILCA. The Birch Creek WSR CRMP/EA included an analysis of alternatives for the subsistence uses of resources within the Birch Creek WSR Corridor.

The John D. Dingell, Jr. Conservation, Management, and Recreation Act, Title II, Sportsman's Act of 2015

The BLM is required by the John D. Dingell, Jr. Conservation Management, and Recreation Act to facilitate the expansion and enhancement of hunting, fishing, and recreational shooting on its public lands.

Summary of Consultation and Coordination

The BLM formally and informally coordinated and consulted with other federal agencies, State and local governments, Native American Tribes, and the interested public.

The federal government works on a government-to-government basis with federally recognized Tribes because they are recognized as separate governments. Under Executive Order 13175, the federal government also consults with ANCSA Corporations on the same basis as Tribes. As a matter of practice, the BLM coordinates with all Tribal governments, associated Native communities, Native organizations, and Tribal individuals whose interests might be directly and substantially affected by activities on public lands.

In addition, Section 106 of the NHPA requires federal agencies to consult with Native American Tribes for undertakings on Tribal lands and for historic properties of significance to the Tribes that may be affected by an undertaking (36 CFR 800.2(c)(2)). BLM Manual 1780, Tribal Relations, and BLM Handbook H-1780-1, Improving and Sustaining BLM-Tribal Relations, provide guidance for Native American consultations. Executive Order 13175 stipulates that during the National Environmental Policy (NEPA) process, federal agencies must consult with Tribes identified as being directly and substantially affected.

Consultation with the State Historic Preservation Office (SHPO) was not necessary for the CRMP, according to the "Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in Alaska" (signed February 2014). It states each field office

responsible for preparing or amending a land use plan/RMP or an EIS will, when beginning its planning effort, invite the SHPO to participate for the purpose of identifying issues that should be addressed. The BLM will invite the SHPO to comment on any proposed cultural resource use allocations, whether these are made in regional, local, or project plans. Field offices will send all draft and final RMPs, plan amendments, EISs, and activity plans that involve or affect cultural resources to the SHPO for review and comment. Because cultural resources were not going to be affected in any way by the CRMP, let alone assigned use allocations to any of them, the BLM concluded that consultation for this particular planning effort was not required.

Cooperating agencies, Tribes, and ANCSA Corporations work with the BLM by sharing knowledge and resources to achieve desired outcomes for public lands and communities within statutory and regulatory frameworks. The BLM invited Tribes to a government-to-government consultation for the CRMP/EA in a letter dated December 28, 2022. Tribes invited included the Birch Creek Tribe; Circle Tribal Council; Danzhit Hanlaii Corporation; Doyon, Limited; and Tiheet' aii, Incorporated. None of the Tribes elected to participate.

A cooperating agency is any federal, state, or local government agency or Native American Tribe that enters into formal agreement with the lead federal agency to help develop an environmental analysis. The BLM invited the State of Alaska, Yukon Flats National Wildlife Refuge, US Fish and Wildlife Service, Yukon-Charley Rivers National Preserve, Chalkyitsik Village, Chalkyitsik Native Corporation, Native Village of Fort Yukon, and Gwitchyaa Zhee Corporation to be cooperating agencies in a letter dated December 28, 2022. Agencies that signed memoranda of understanding to participate as a cooperating agency were the National Park Service, the State of Alaska, and the US Fish and Wildlife Service. The BLM solicited cooperating agencies to provide input and feedback on the purpose and need statements and alternatives in the Birch Creek CRMP/EA. Specifically, the BLM:

- Conducted a meeting on January 26, 2023, with potential cooperating agencies to describe the CRMP process.
- Provided cooperating agencies with the draft purpose and need statements, draft themes for the alternatives, draft alternatives, and draft scoping summary report for the CRMP/EA on March 20, 2023, to review and provide input and feedback.
- Conducted a meeting on April 26, 2023, to describe how the BLM addressed input and feedback on the draft purpose and need statements, draft themes for the alternatives, and draft alternatives.
- Conducted a meeting on May 4, 2023, to describe how the BLM addressed input and feedback on the alternatives.
- Provided cooperating agencies with an internal review Draft EA on June 23, 2023, to review and provide input and feedback.

Coordination with cooperating agencies during implementation is included in the description of management actions and is intended as applicable even if not explicitly included.

Summary of Public Participation

In developing the CRMP/EA, the BLM solicited public input during the public scoping period. The BLM's public outreach and collaboration are ongoing, and they will continue throughout the development of the CRMP/EA.

Through the CRMP project ePlanning website, the BLM announced that the scoping period would occur from January 5, 2023, to February 4, 2023. Also, on January 17, 2023, from 5:00 to 7:00 p.m., the BLM held a virtual scoping meeting that was open to the public to learn more about the CRMP/EA. Comments and information could be submitted. The meeting began with a presentation by the BLM about the Birch Creek WSR and CRMP process. It was followed by a question-and-answer period and then a comment submission period.

All comment submissions received on or before February 4, 2023, were evaluated and considered in the scoping summary report. However, the BLM still considered comments received after this date in developing the CRMP/EA. The report provides an overall summary of the types of comments received during the 30-day comment period related to each issue.

Comments were received from individuals; ANILCA Implementation Program; Council of Athabascan Tribal Governments; and Doyon, Limited during the public scoping period. Substantive comments were entered into the comment application and response application database for analysis. Substantive comments were categorized into 20 issue categories.

Through the CRMP project ePlanning website, the BLM announced a 30-day public comment period beginning October 10, 2023, for the Birch Creek WSR Draft CRMP/EA. The BLM received 16 unique written submissions during the public comment period. The BLM reviewed each submission and extracted individual substantive comments; the number of substantive comments extracted from these submissions varied between all submissions. The BLM identified 129 substantive comments that were categorized into 25 issue categories.

Regional Setting and River Values

This section establishes the baseline conditions of the river values that contributed to Birch Creek's designation within the NWSRS. The river values for each creek include free flow; water quality; and scenic, recreation, and fisheries ORVs.

River Setting Description

Birch Creek WSR was designated in 1980 through the ANILCA. The Birch Creek WSR begins approximately 1 mile upstream from the confluence of Twelvemile and Birch Creeks, near mile 94 on the Steese Highway (**Figure B-1**, Birch Creek Wild and Scenic River). Current hydrography data and mapping technology indicate a distance of 111.14 river miles. Approximately 77 miles of the Birch Creek WSR flow through the Steese NCA, which also was established by the ANILCA.

The Birch Creek WSR Corridor segment is defined as a 0.5-mile buffer from the ordinary high-waterline surrounding the length of the segment. Due to the limited levels of development within the Birch Creek WSR Corridor at the time of designation, the entire Birch Creek WSR Corridor was classified as wild due to its isolated, primitive nature.

The Birch Creek WSR is primarily in very remote and undeveloped sections of the Steese NCA. However, portions of the Birch Creek WSR are adjacent to the Steese Highway, Native lands,

and privately owned parcels in its lower reaches near Circle, Alaska. Approximately 97 percent of the Birch Creek WSR Corridor is administered by the BLM.

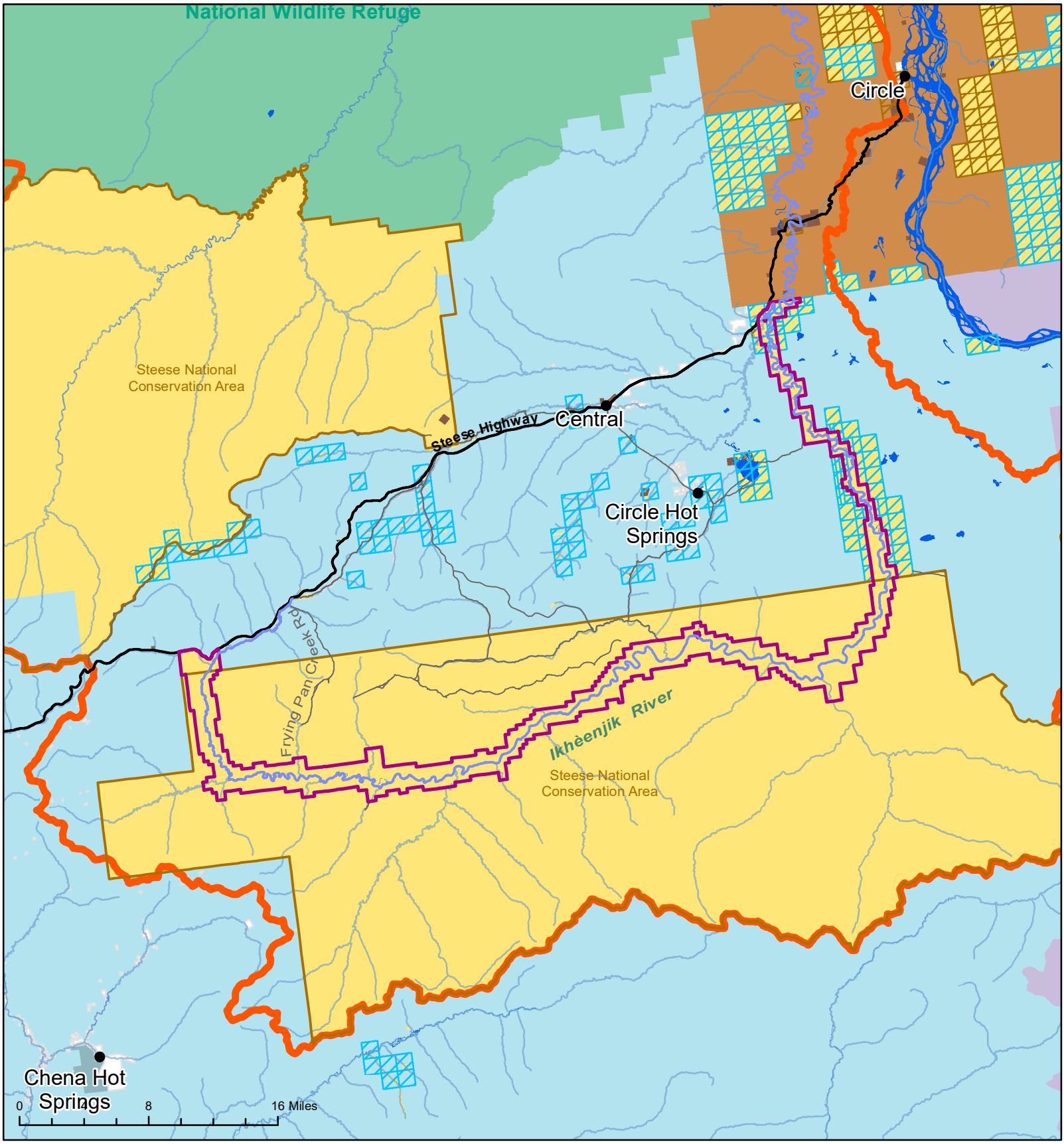


Figure B-1. Birch Creek Wild and Scenic River

- Wild and scenic river corridor
- Ikhèenjik River
- Ikhèenjik River watershed boundary
- National Conservation Area
- State Selected
- Native Selected
- Bureau of Land Management
- Air Force (less than 1 acre)
- Fish and Wildlife Service
- National Park Service
- State
- Local Government
- Native Allotment
- Native Lands
- Private
- Water

Data Source: BLM GIS 2022
Print Date: 06/01/2023

Free-Flowing Condition

The Ikhèenjik River is a perennial clear-water stream that flows about 340 miles from its headwaters near Eagle Summit, through remote private, State, and federal land in Interior Alaska. Flows increase and decrease rapidly in response to rainfall or rapid snowmelt events; this is because the relatively steep slopes, thin soil cover, and permafrost in the watershed have a low capacity for retaining precipitation or meltwater (Kennedy and Langley 2007).

The Birch Creek WSR is free flowing along its entire length and does not contain any impoundments, diversions, or riprap that interfere with its free flow. There are no road crossings.

Water Quality

To protect river values, the current water quality monitoring strategy is to operate long-term stream gage stations equipped with automated water meters recording daily water temperature, specific conductivity, pH, and turbidity at the beginning and end of the Birch Creek WSR. Additional discrete water quality measurements are collected during float trips, every 1-3 years at the confluence of major tributaries, to monitor tributary water quality contributions to the Birch Creek WSR. Information about water quality is essential to developing a strategy that protects identified parameters of water quality, consistent with appropriate State of Alaska water quality standards and the Clean Water Act. Water quality monitoring is in cooperation with the USGS and the ADEC. Adaptive management involves understanding the baseline values and variability of Birch Creek water quality parameters that is an essential aspect of determining the extent to which future management actions may protect and/or enhance water quality and water-dependent ORVs. The BLM works closely with the ADEC to document water quality and remedy actions or incidents that may adversely impact water quality.

Stream segments not meeting water quality standards for designated uses for one or more pollutants are placed on the Section 303(d) list of water quality-impaired waterbodies, as required by the federal Clean Water Act. Approximately 1 mile of Birch Creek WSR is listed as impaired, Category 4A, for turbidity (BLM GIS 2023b).

Several tributaries in the Birch Creek WSR are on the Section 303(d) list of water quality-impaired waterbodies, because they exceed water quality standards (ADEC 2008). There are approximately 88 miles of streams listed as impaired, Category 4A, for turbidity, located upstream of the Birch Creek WSR Corridor (BLM GIS 2023b). Upper Birch Creek WSR is the only stream on BLM-administered lands on the 303(d) list. The Environmental Protection Agency (EPA) issued a TMDL for total settleable solids to meet water quality standards for turbidity (EPA 1996; BLM 2016a).

The BLM, in cooperation with the USGS, has been monitoring daily streamflow and periodic water quality measurements since 2008 on placer-mined streams, including the upper Birch Creek WSR and Nome Creek. The intent is to determine whether water quality and water chemistry downstream of previously mined areas comply with Alaska water quality standards. Preliminary results indicate that at moderate to low streamflows, mined streams now typically meet Alaska water quality standards. Some sections of stream channel in the Birch Creek WSR and Nome Creek have ongoing reclamation efforts (BLM 2016a).

Alaska has experienced a significant increase in annual average temperatures since the late 1970s, with temperatures rising at approximately 0.7 degrees Fahrenheit per decade (US Global Change Research Program 2018). Statewide temperatures have increased by about 3 degrees

Fahrenheit since 1925, with accelerated warming observed since 2013 (National Oceanic and Atmospheric Administration 2023). As air temperatures rise, stream temperatures are predicted to increase due to glacial melt, loss of snowpack, thawing permafrost, and changes in the streamflow (Sjöberg 2021; Blaskey 2023).

Instream Flow Requirements

One of the primary goals of the WSRA is to protect selected rivers in their free-flowing condition for the benefit of future generations. Section 13(c) of the WSRA recognizes the importance of instream flow protection through the establishment of a federal reserved water right for each designated river to accomplish the purposes of the WSRA. It is the BLM's policy to use the State's appropriate instream water rights process, a separate process from federal reserve water rights, to protect the flow-dependent ORVs. The WSRA directs river managers to take steps within their authority to protect the instream flows necessary to protect and enhance the water quality and ORVs. The use of the term "instream flows" simply refers to the amount of water flowing in a river (Interagency Wild and Scenic Rivers Coordinating Council 2022).

Under Action 5.1 in the 1983 River Management Plan for the Birch Creek WSR, a reservation of minimum water flows sufficient for public recreation use and to support the values for which the wild river was designated, would be determined in cooperation with the Alaska Department of Natural Resources, Division of Mining, Land and Water. Also, the 7250 – Water Rights Manual (BLM 2013) establishes policy and guidance for the BLM in locating, perfecting, documenting, and protecting BLM-administered water rights, which are considered property rights, necessary to manage and conserve the economic and resource values of the public lands. The BLM's goal is to provide enough instream flow to protect and enhance the river values, including the fisheries, recreation, and scenic ORVs.

The Federal Land Policy and Management Act provides the BLM with the authority to apply for and acquire water reservations for beneficial uses on public lands. This CRMP would not impact any existing water rights or appropriation for Birch Creek. A study was conducted between 1989 and 1994 to document average monthly streamflow for six contiguous stream segments encompassing the Birch Creek WSR Corridor (BLM 1996). Findings from the study were used by an interdisciplinary team to develop recommended monthly average instream flows necessary for the protection of valued Birch Creek WSR resources. In 2001, the BLM filed an instream flow water reservation application with the State of Alaska for the right to reserve these recommended monthly average instream flows (BLM 2001). While the application has not yet been adjudicated, the application submission date (January 11, 2001) for the Birch Creek WSR is the priority date, should the application be certified. Any subsequent water rights applications that may impact streamflow would be secondary to the 2001 application.

The requested monthly instream flows values, summarized in **Table B-1**, are reported in cubic feet per second for each of the six stream segments included in the 2001 instream flow water reservation application. The BLM currently monitors daily instream flows at the upstream and downstream extent of the Birch Creek WSR.

Table B-1. Recommended Instream Flow Values by Month for Six Locations, Birch Creek WSR (discharge in cubic feet per second)

Month	Above Twelvemile Creek	Below Twelvemile Creek	Above Clums Fork	Above Harrison Creek	Below South Fork	Steese Highway Bridge
January	1	2	2	5	8	15
February	1	2	2	5	8	15
March	1	2	2	5	8	15
April	15	25	40	80	120	200
May	180	300	400	800	2,000	2,000
June	130	250	400	800	1,500	2,000
July	45	130	200	400	600	500
August	45	130	200	400	600	500
September	45	130	200	400	600	500
October	15	25	40	80	120	200
November	10	25	40	80	120	200
December	1	2	2	5	8	15

Source: BLM 2001

Section 7 of the WSRA (16 USC 1278), as amended, provides for the protection of the free-flowing condition. The BLM follows WSRA Section 7 procedures to determine whether projects above or below, within the Birch Creek WSR or on its tributary streams, would unreasonably diminish the free-flowing condition or ORVs in the WSR corridor. If the project is found to have a direct and adverse effect on the values of the Birch Creek WSR, project redesign and resubmittal for a subsequent Section 7 determination is advised as part of adaptive management.

The current water quantity monitoring strategy for the Birch Creek WSR is to operate long-term stream gage stations, recording daily water level and discharge, at the beginning and end of the Birch Creek WSR. Additional discrete streamflow measurements are collected every 1-3 years during float trips at the confluence of major tributaries to monitor tributary flow contributions. Stream gage monitoring data are critical for acquiring and protecting state and/or federal reserved water rights, and they are essential to developing strategies that protect aquatic habitat, water-dependent ORVs, and riverine processes (channel maintenance). Streamflow monitoring is in cooperation with the US Geological Survey (USGS) and National Weather Service. Adaptive management involves understanding the baseline rates, volume, and timing of surface water flow that is an essential aspect of determining the extent to which future management actions may protect and/or enhance streamflow and water-dependent ORVs.

Outstandingly Remarkable Values

ORVs are typically identified in a study prior to WSR designation, but Birch Creek WSR was designated by the ANILCA without these specific values identified by Congress. The 2016 Eastern Interior Proposed RMP/Final EIS, Appendix E Wild and Scenic Rivers Inventory (BLM 2016a) contains an assessment of ORVs for Birch Creek WSR, and the 2016 Steese ROD (BLM 2016b) established recreation, scenic, and fisheries as ORVs for Birch Creek WSR.

Scenery

The BLM manages visual resources through the BLM's Visual Resource Management (VRM) system as outlined in Bureau Manual 8400. The VRM system and policies provide a nationally consistent way of inventorying, planning, and managing public lands. Visual management

objectives (classes) are developed through the RMP process for all BLM-administered lands. These VRM classes describe the limits of allowable visual change to the characteristic landscape (BLM 2022b). VRM classes are based on conditions such as scenic quality, viewing distance zones, and viewer sensitivity levels.

The Birch Creek WSR Corridor, which is classified as wild, lies within the Yukon-Tanana Uplands. It is VRM Class I and it has a scenic quality of "A." The objective of VRM Class I is to preserve the existing character of the landscape. VRM Class I provides for natural ecological changes; however, it does not preclude very limited management activities. The level of change to the characteristic landscape should be very low and it should not attract attention (BLM 2016b).

The upper reach of Birch Creek WSR features a narrow and winding canyon, surrounded by birch and spruce upland and offering occasional glimpses of historic structures. At the confluence with Harrington Creek, the channel widens and reveals a backdrop of low rounded hills and mountains. In this section of river, rapids over an 8-mile stretch, outcropping bedrock, diverse vegetation types, and gravel bars with shrubs and debris create visual contrast and provide points of interest. This section also offers more opportunities to catch glimpses of historic cabins and hike to higher elevations for stunning views of the river system. The lower section enters the Yukon Flats, where the river valley widens for miles and the river meanders with numerous channels with broad gravel bars and unique features like cliff areas and lodged trees. Varied vegetation and changing views add to the scenic experience (BLM 2016a).

Birch Creek WSR exhibits diverse topography, transitioning from a headwater stream to a mature river with meandering bends and braided systems. A segment of 8 miles showcases intermittent bedrock, rapids, and contrasting visuals with vegetation, gravel bars, and water. The changing views include foreground hills, middle distant mountains, and broad flats, providing a mosaic of backdrops for floaters. Few historic structures and cabins blend with the landscape, offering points of interest. The area has a variety of vegetation types and seasonal colors exemplary to Interior Alaska. Because of these characteristics, the scenic value of Birch Creek WSR was found to be outstandingly remarkable (BLM 2016a).

(Additional information is available in Section E.2.1., Outstanding Remarkable Values for Birch Creek of the Eastern Interior Proposed RMP/Final EIS, Appendix E Wild and Scenic Rivers Inventory [BLM 2016a]).

Recreation

Birch Creek was congressionally designated as a WSR in 1980 as part of the ANILCA. Recreation is one of the ORVs that supported WSR designation, along with scenic and fisheries. It also facilitates multiple recreational experiences within the Steese NCA in central Alaska. The Steese ROD and Approved RMP designated the Birch Creek recreation management zone (RMZ), with the goal of providing high-quality, multiday recreational float boat opportunities for users who desire a recreation experience characterized by solitude, tranquility, self-reliance, challenge, and risk in a semiprimitive Interior Alaska river setting (BLM 2016a). Characteristics of the semiprimitive recreation setting classification are detailed in Tables 8, 9, and 10 in the Steese ROD. The Steese NCA is designated as OHV limited by the Steese TMP, and routes are opened on a seasonal basis. In the summer, there are 136 miles of managed routes open to motorized use, most of which are located north of the Birch Creek WSR Corridor (BLM 2022a).

In the decision area there are 75 miles of OHV routes that primarily follow the Birch Creek WSR, however, the Steese TMP prohibits summer OHV use in the Birch Creek WSR Corridor.

Visitation to the Birch Creek WSR Corridor and surrounding Steese NCA has been increasing in recent years.

Gathering good visitor use data has been challenging for the BLM for many years, primarily due to limited staff and funding. The BLM has relied on estimates from information gathered from periodic river patrols, casual observance of put-in and take-out sites along the river, monitoring of special use permits, and occasional more focused use studies. Through the BLM's current monitoring, the BLM has remained confident it is meeting the guidance of maintaining a "semiprimitive/wild" river setting. There has been limited evidence of human impacts. Average group size and encounters have remained low. No significant user conflicts have occurred.

The 1975 Final Environmental Statement for the Birch Creek National Wild River estimated the number of users on the proposed Birch Creek WSR at around 2,700 user days or about 540 users. In 2003 and 2004, the BLM conducted weekly overflights of Birch Creek WSR to help determine baseline use for motorized and nonmotorized summer boat users. The 2004 data was invalid due to an excessive wildfire season and limited flight data. The 2003 survey identified 189 users of the river during those flights. Actual use of the river at that time was to be projected at between 200 to 300 users. This data did not include motorized and nonmotorized winter users or those other summer users who may have hiked or entered the WSR corridor through some other means.

Annually, the BLM enters estimated visitor use into its Recreation Information Management System to track this use. **Table B-2** shows the use that has been entered over the past 10 years, including the 1975 estimate. Higher estimates of the years 2018–2020 are likely explained by a high interest and availability of caribou during the hunting seasons those years. Use levels have tapered off as the caribou population and interest have leveled out.

Table B-2. Reported Visitor Use of Birch Creek WSR Corridor

Year	1975	2012	2013	2014	2015	2018	2019	2020	2021	2022
Number of Users	540	730	669	602	751	1569	1569	1612	1258	1233

Source[1]

The BLM has continued to look at new developing technology to improve tracking visitor use. Some new equipment has been deployed recently to help improve tracking visitor use. Each year, innumerable variables can alter visitor use, including heavy rain and flood, wildfires, and, as noted earlier, an unprecedented increase in the caribou population and interest in hunting.

In the summer and fall, recreation activities in the Birch Creek WSR Corridor include motorized boat use; nonmotorized float boat use, such as canoeing, kayaking, and rafting; wildlife viewing; hunting; and fishing. Dog mushing, snow-machining, and cross-country skiing are popular activities in the winter, when the Birch Creek WSR is frozen and there is ample snow cover. The Yukon Quest Sled Dog Race follows portions of the Birch Creek WSR Corridor in February (Bross 2022), and snow-machining and cross-country skiing on the lower Birch Creek WSR are popular activities in March and April.

[1] Personal communication from Tim Hammond, Field Manager - Eastern Interior Field Office, BLM via email on July 31, 2023.

The Birch Creek WSR Corridor presents a unique opportunity for recreationists. It is one of the very few clear-water rivers in Interior Alaska with road access at two points on an otherwise undisturbed river segment. Motorized use is typical on many Alaskan rivers popular for recreation, but on the Birch Creek WSR, nonmotorized boats, including kayaks, canoes, and rafts, are more likely to be present. The recreational setting provides visitors with the opportunity to experience solitude, closeness to nature, and exploration of a pristine river system. Most floaters begin their trip at the Upper Birch Creek Wayside (mile 94 of the Steese Highway), and they travel downstream approximately 110 miles to the Lower Birch Creek Wayside (mile 140.5 of the Steese Highway).

Most trips take an average of 5 to 7 days. This portion of the Birch Creek WSR Corridor includes multiple river settings, including headwater streams, calm and meandering segments, and whitewater experiences. Depending on water levels, whitewater rapids can be Class II or Class III. Class II whitewater rapids are considered novice, and involve straightforward rapids with wide, clear channels that are evident without scouting. Class III whitewater rapids are considered intermediate and require a moderate level of skill to handle irregular waves and complex maneuvers (American Whitewater 2005). A shorter river trip opportunity follows 16-miles from the Lower Birch Creek Wayside (mile 140.4 of the Steese Highway) to the Birch Creek Bridge (mile 147 of the Steese Highway). This trip typically takes 1 or 2 days to complete, and it is more popular with motorized watercraft users during hunting season. However, scoping revealed that there also may be increased motorized use throughout the Birch Creek WSR Corridor.

SRPs are authorizations, which allow specified recreational uses of public lands and related waters. They are issued to provide a mechanism to accommodate commercial recreational use; protect natural and cultural resources; and manage visitor use. There are four active SRPs in the Steese NCA. Three SRPs in the Birch Creek WSR Corridor are for outfitting and guided trips on the WSR, and one is for competitive dogsled racing. Permitted users commonly haul out any waste they produce. Overall, there is a relatively low number of permitted uses in the Birch Creek WSR Corridor.

Negative impacts on the recreation ORV in the Birch Creek WSR Corridor include climate change, noise from OHV use and fighter jet training, and impacts from mining operations in the upper watershed. The region will see increased temperatures and, due to resulting evaporation outpacing projected increases in precipitation, reduced water availability over the next century, as well as more frequent and intense wildfires (Rupp and Springsteen 2009; Trainer et al. 2009). Climate impacts can lead to compromised recreational facilities, loss of biodiversity, impacts on fishing, and changes to viewing wildlife and the scenery in the Birch Creek WSR Corridor. Noise from fighter jets and OHV use were noted in scoping comments as issues decreasing the quality of the remote recreation setting. Mining operations that exist throughout the larger watershed and the tributaries that feed into the Birch Creek WSR could result in erosion, sediment loading, and pollution discharge, all of which have a negative impact on recreation experience and setting for river floaters.

Fisheries

The Birch Creek WSR has one of the highest diversities of fish in the region, supporting 12 known species of fish; this makes fisheries an ORV (BLM 2016a). The Birch Creek WSR

sustains healthy and viable populations of Arctic grayling (*Thymallus arcticus*), round whitefish (*Prosopium cylindraceum*), humpback whitefish (*Coregonus pidschian*), sheefish (*Stenodus leucichthys*), least cisco (*Coregonus sardinella*), northern pike (*Esox lucius*), burbot (*Lota lota),* slimy sculpin (*Cottus cognatus*), and blackfish (*Dallia pectoralis)*.

Similarly, the Birch Creek WSR also supports anadromous populations of Chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*Oncorhynchus keta*), and coho salmon (*Oncorhynchus kisutch*). Determining the status of salmon populations can be challenging due to below-average returns (Volk et al. 2009) and the resources required to effectively monitor population trends. However, salmon populations can be partially assessed by the health of returns in the Yukon River, which is a higher-order stream that Birch Creek converges into. As such, all streams that support salmon spawning and rearing habitat, including the Birch Creek WSR, are crucial both locally and regionally.

While the extent of the impact on fish populations is unknown, the Birch Creek WSR remains an important habitat for numerous fish species, contributing to its status as one of the most diverse watersheds in the region.

The Birch Creek WSR Corridor overlaps with 10 conservation watersheds identified in the Steese ROD and Approved RMP (BLM 2016a). These watersheds overlap with approximately 61,800 acres (90 percent) of the Birch Creek WSR Corridor, they contain essential fish habitat, and they are managed as priority habitats (BLM 2016a, BLM 2023). Priority habitats are those habitats that support any life stages of priority aquatic species, which includes both resident and anadromous fish species. The Birch Creek WSR Corridor overlaps with four restoration watersheds, covering approximately 2,200 acres (3 percent of the Birch Creek WSR Corridor), identified by the Steese ROD and Approved RMP and they contain essential fish habitat (BLM 2016a, BLM 2023).

Existing Conditions of Resources Other than Outstandingly Remarkable Values

Subsistence Resources

Passage of the ANILCA was directly responsible for designation of the Birch Creek WSR, as well as establishing federal policy regarding subsistence use and management. ANILCA Title VIII provides provisions to ensure that public lands in Alaska are managed to provide the opportunity for continued subsistence uses on those lands. Subsistence uses are defined in the ANILCA, Title VIII, Section 803, as the "customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing; and for customary trades" (BLM 2016c). The BLM ensures that rural residents engaged in subsistence uses have reasonable access to subsistence resources on public lands, including within WSR corridors.

Two nearby rural villages, Central and Circle, are most relevant to analysis of subsistence use under this Birch Creek WSR CRMP, since they have subsistence use areas present within the Birch Creek WSR Corridor and the larger Ikhèenjik River watershed surrounding it (Trainor et al. 2020).

Based on studies by the ADF&G, a wide variety of fish, wildlife, and vegetation are harvested by subsistence users in these communities for many purposes, including food, fuel, arts and crafts,

tools, clothing, and traditional cultural practices. Of note is that the subsistence use areas developed in these studies represent subsistence use for a segment of the population at the time of the study; subsistence use is likely to occur outside of these mapped areas as well.

Subsistence resource use areas belonging to Central that directly overlap with the Birch Creek WSR Corridor include non-salmon fishing areas along much of the Birch Creek WSR Corridor and hunting areas for large and small land mammals as well as birds, present in the northeast end of the Birch Creek WSR Corridor. Land mammal and bird hunting areas also are documented outside of the Birch Creek WSR Corridor in the surrounding Ikhèenjik River watershed. It is reported that berries and greens and firewood resource harvest areas are present at the northeast end of the Birch Creek WSR Corridor (Trainor et al. 2020, BLM GIS 2023).

The subsistence resource use areas belonging to Circle that directly overlap with the Birch Creek WSR Corridor include large land mammal and bird hunting areas present in the northeast end of the Birch Creek WSR Corridor. Large land mammal and bird hunting areas also are documented outside of the Birch Creek WSR Corridor in the surrounding Ikhèenjik River watershed. Berries and greens resource harvest areas are reported at the northeast end of the Birch Creek WSR Corridor (Trainor et al. 2020, BLM GIS 2023).

Impacts on subsistence use from increasing recreation and competition between subsistence users and recreational hunters was found to be an issue of concern during the scoping process, potentially impacting the abundance and availability of subsistence resources.

Cultural Resources

The term “cultural resources” is used to encompass the broad scope of resources that must be considered by the BLM as defined in more detail below. A cultural resource is a definite location of human activity, occupation, or use identifiable through field survey, historical documentation, or oral evidence (BLM Manual 8100). The term “cultural resources” is inclusive and it has been adopted and widely used to refer to the diverse human record found in sites, structures, objects, and places created and/or used by people. These may comprise archaeological, historic, or architectural sites, structures, objects, or places. They also may include locations for traditional cultural or religious importance to a particular social and/or cultural group, often referred to as traditional cultural properties (TCPs).

Cultural resources also include “archaeological resources,” as defined in the Archaeological Resources Protection Act of 1979, and other sites, structures, objects, items, and places as addressed in other statutes and regulations (for example, American Indian Religious Freedom Act of 1978, Antiquities Act of 1906, NEPA, and Native America Graves Protection and Repatriation Act of 1990).

“Historic properties,” as defined in the National Historic Preservation Act and its implementing regulations found at 36 CFR 800, are cultural resources determined to be eligible for listing in the National Register of Historic Places (NRHP). In addition to meeting at least one of the four main NRHP eligibility criteria (association with a significant event, person, distinctive architecture or construction style, or potential for information), cultural resources also must exhibit integrity of at least one of the following to be eligible: location, design, setting, materials, feeling, workmanship, or association.

Cultural resource-related research in the Interior of Alaska, a larger region within which the Birch Creek WSR and larger Ikhèenjik River watershed are situated, indicates that humans have

inhabited the region for over 14,000 years (Holmes 1996; Holmes 2001), including some of the earliest dated archaeological sites in the Americas. Cultural resources in the region are diverse, with recorded site types including a wide range of material cultures and ages from prehistoric archaeological cultures as well as historic Athabaskan and Euro-American sites (Bowers and Gannon 1998), such as the Circle to Fairbanks Historic Gold Rush Trail. This Circle to Fairbanks Historic Gold Rush Trail was previously submitted for nomination to the NRHP; it was noted in the 1983 River Management Plan (BLM 1983) as passing through the Birch Creek WSR Corridor. This was later determined not to be the case (BLM 2016a).

Based on up-to-date cultural resource data (BLM GIS 2023), the Birch Creek WSR Corridor contains 35 previously recorded archaeological resources: 19 historic-period sites, 15 from the prehistoric period, and one of indeterminate age and cultural affiliation. Along or near the boundary of the Birch Creek WSR Corridor, there are four linear historic transportation sites. These comprise the North Fork Twelvemile Creek Bridge of the Steese Highway (previously Alaska Railroad Commission Route 16); two other segments of the Steese Highway; and the previously mentioned Circle to Fairbanks Historic Gold Rush Trail.

Known prehistoric era sites in the Birch Creek WSR Corridor consist of shallow or surficial lithic scatters, some of which may have been campsites or hunting lookouts. Known historic-era sites in the Birch Creek WSR Corridor mostly consist of habitations and related structures; some built and occupied within the last 50 years, and many in varying states of collapse.

No potentially eligible cultural resources within the Birch Creek WSR Corridor have been determined eligible for inclusion in the NRHP. The known site types within the Birch Creek WSR Corridor are not as diverse as those found in the surrounding region. In particular, the majority of the known prehistoric sites within the Birch Creek WSR Corridor are surficial or shallowly buried sites (less than 8 centimeters [3.15 inches] in depth), and likely date to the late prehistoric Athabascan Tradition.

Of the sites for which condition information is available, most are observed to be in a natural state of weathering, undisturbed by vandalism, construction, or abnormal weathering such as flooding or earthquakes. Some previously documented cultural resources have eroded away with very little or no remaining traces of their existence. Sites that appear to have completely eroded away include an early twentieth-century roadhouse and the suspected location of a historic Athabaskan village. Field notes for many archaeological sites in the Birch Creek WSR Corridor indicate they could harbor undisturbed cultural deposits, potentially making them eligible for inclusion in the NRHP.

As of May 2023, less than 1 percent of the Birch Creek WSR Corridor had been intensively pedestrian surveyed for cultural resources, and many additional unknown cultural resources are likely to be present. Of note is that the distribution of known sites favors highly visible historic-aged resources. The areas surveyed for cultural resources tend to be those that are most accessible, such as near river access and highways. While the known resources are not necessarily a representative sample of all the resources within the Birch Creek WSR Corridor, based on evaluation of the topography within the Birch Creek WSR Corridor, any as-yet undiscovered prehistoric sites located there are not likely to include site types that are unusual or rare in the region, such as caribou drives or long-term or winter village sites (BLM 2016a).

Both the historic and prehistoric cultural resources documented within and immediately around the Birch Creek WSR Corridor are fairly typical of cultural resources found in similar settings

throughout the Eastern Interior planning area of Alaska (BLM 2016a, Section 3.2.3.3). Cultural and historical values are not determined to be one of the Birch Creek WSR ORVs (BLM 2016a, Appendix E, Section 2.1), though this could be reassessed in a future CRMP if cultural resources of a rare or unusual nature are discovered. There are no known TCPs within or adjacent to the Birch Creek WSR Corridor, but these resources are often not revealed outside of the affected communities.

Within the Birch Creek WSR Corridor, natural processes may be influenced by climate change. Processes such as permafrost thaw, river erosion, and wildfire may cause direct and indirect impacts on cultural resources. Physical degradation of sites due to natural processes, such as erosion, can result in exposure of previously unknown cultural resources, loss of artifacts and features, or potentially complete destruction.

Alaska Native Interests

Occupied and utilized since time immemorial, the Birch Creek WSR Corridor (and the larger Ikhèenjik River watershed) historically has been occupied and utilized by Gwich'in Athabascans (Gwich'in Tribal Council 2023). The closest Gwich'in communities to the Birch Creek WSR are the Circle Native Community and the Birch Creek Tribe, located in the Yukon Flats downstream from the Birch Creek WSR Corridor.

The Alaska Native Allotment Act of 1906 allowed Alaskan Natives to receive the title for 160 acres of land in Alaska. The Native Allotment Act was repealed in 1971, when the ANCSA became law. Under the ANCSA, in exchange for settling Alaskan Native land claims, land and money were distributed to the Alaska Native Corporations (ANCs) established by ANCSA.

Alaskan Native-owned lands and Native allotments are present throughout Alaska. In and immediately around the Birch Creek WSR Corridor, they border the northeast portion of the Birch Creek WSR Corridor, with one 37-acre Native allotment located at the confluence of Portage Creek and the Ikhèenjik River within the southeastern portion of the Birch Creek WSR Corridor.

The BLM conducts government-to-government consultation with federally recognized Tribes in accordance with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments; the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments; the Department of the Interior's Alaska Policy on Government-to-Government Relations with Alaska Native Tribes dated January 18, 2001; and BLM Manual 1780, Tribal Relations.

The BLM EIFO reached out on December 28, 2022, regarding this land use planning effort. The BLM reached out to the Birch Creek Tribe, Circle Tribal Council, their associated community Native corporations (Tihteet' aii Inc. and Danzhit Hanlaii Corp), as well as the regional ANC Doyon, Limited in compliance with the previously described legal and regulatory framework.

Tribal entities that expressed interest in the current land use planning effort include:

- Council of Athabaskan Tribal Governments
- Doyon, Limited

The concerns regarding Alaska Native interests identified during the scoping process include:

- The CRMP could complicate access and use of ANC lands, including development of mineral resources by ANCs and their partners.
- The CRMP must address exclusion of Alaska Native-owned lands from the Birch Creek WSR Corridor.
- The BLM must consider the effects of the CRMP on access to and use of public lands, and of waterways for food, fuel, supplies, and transportation.
- The Council of Athabaskan Tribal Governments is working on a 5-year stewardship plan for the Yukon Flats area that will complement the mission of the USFWS and the BLM.

Soils and Permafrost

Soils are living, dynamic resources that support all vegetation communities and ecosystems. Soils are formed from the interactions between parent materials, climate, organisms, and topography over time, and they have varying physical, chemical, and biological properties. Spatial data from the Natural Resources Conservation Service (NRCS) for soils in the Birch Creek WSR Corridor currently are not available. This analysis uses common soil types associated with EPA Level III Ecoregions in Alaska, which are summarized by Gallant et al. (1995). The three ecoregions in the Birch Creek WSR Corridor and their common soil types are listed in **Table B- 3**, EPA Ecoregions and Common Soil Types in the Birch Creek WSR Corridor. Permafrost in these ecoregions is discontinuous (Gallant et al. 1995).

Table B-3. EPA Ecoregions and Common Soil Types in the Birch Creek WSR Corridor

EPA Level III Ecoregion	Soil Types	Acres
104—Interior Forested Lowlands and Uplands	Cryaquepts, Haplocryepts,[1] Humicryepts,[2] Cryorthents	8,700
105—Interior Highlands	Cryaquepts, Haplocryepts,[1] Humicryepts,[2] Cryorthents, Haplocryods[3]	59,700
107—Yukon Flats	Cryaquepts, Haplocryepts[1]	700
Total	—	**69,000**

Sources: Gallant et al. 1995; EPA 2012; NRCS 2022; BLM GIS 2023
[1]Defined in NRCS 2022. The equivalent of "Cryochrepts" in Gallant et al. 1995.
[2]Defined in NRCS 2022. The equivalent of "Cryumbrepts" in Gallant et al. 1995.
[3]Defined in NRCS 2022. The equivalent of "Cryorthods" in Gallant et al. 1995.

All the soils listed in **Table B-3** have a cryic soil temperature regime, meaning they have mean annual temperatures between 0 degrees and 8 degrees Celsius (NRCS 2022). Cryaquepts have undergone moderate degrees of weathering, and they have an aquic soil moisture regime, meaning they are saturated by water and generally poorly drained. Haplocryepts, Humicryepts, and Cryorthents have minimal soil horizon development. Humicryepts also have a characteristically thick, humus[2]-rich horizon. Haplocryods have an accumulation of organic matter and aluminum in the subsoil (NRCS 2022).

Some of these soils are further defined as pergelic, aquic, lithic, or histic. Pergelic soils have a mean annual soil temperature of -4 degrees to -10 degrees Celsius, which is cold enough to form permafrost. Aquic soils are saturated with water for at least 20 consecutive days. Lithic soils have a shallow (within 50 centimeters [19.69 inches] of the soil surface) rock layer. Histic soils contain organic matter at or near the soil surface that is at least 20 centimeters (7.87 inches) thick (NRCS 2022).

[2] Dark organic material.

Most soils in the Birch Creek WSR Corridor formed from silty alluvium[3] and loess[4] from the floodplains of the large rivers. Soils on flat areas are poorly drained, commonly overlain by peat,[5] and they have a shallow permafrost table. The permafrost is often near the surface on north slopes, south-facing toe slopes, and valley bottoms. Gravelly soils immediately adjacent to the Birch Creek WSR and on natural levees are better drained and commonly free of shallow permafrost (BLM 1983). Permafrost is frozen soil (at soil temperatures less than 32 degrees Fahrenheit) that may or may not contain ice (Callaghan et al. 2011). Permafrost forms a barrier that prevents infiltration of surface water and maintains a saturated layer of surface soils (BLM 2009).

Water erosion is the detachment and movement of soil particles by rain or moving water (Weil and Brady 2019). Soils are naturally eroded by water and along riverbanks as the river stage recedes and advances. This water movement along the banks also can affect the thermal variation of permafrost and it can result in permafrost thawing (Callaghan et al. 2011). Removal or destruction of the surface organic layer overlying permafrost areas typically increases heat flow, causing permafrost thawing, and it can result in any combination of erosion, surface subsidence, or thermokarst[6] formation (BLM 2009). In some cases, particularly for well-drained soils, permafrost thawing can increase water infiltration (Brabets and Walvoord 2009).

Permafrost can either be a carbon sink (storing carbon) or a carbon source (releasing carbon). The global distribution of permafrost contains about twice as much carbon as is found in the global atmosphere (Edward et al. 2008). Near-surface permafrost is susceptible to thawing because of projected warmer annual average air and ground temperatures for the remainder of the twenty-first century and increased frequency of fires (Rupp and Springsteen 2009; Callaghan et al. 2011; US Global Change Research Program 2018). Since the late 1970s, permafrost thawing in Alaska, especially in areas with discontinuous permafrost like the Birch Creek WSR Corridor, has increased water infiltration rates, groundwater flow, surface dryness, and thermokarst terrain (Osterkamp 2007; Brabets and Walvoord 2009; Callaghan et al. 2011). Organic-rich soils with permafrost, such as those in the Birch Creek WSR Corridor, are particularly susceptible to ground subsidence,[7] subsurface drainage, lower water tables, and thermokarst development (Pastick et al. 2015; Jorgenson et al. 2013). Surface peat that occurs above permafrost can buffer warmer temperatures that cause permafrost thawing; however, this functionality can decrease if the peat is lost to erosion from surface disturbance, such as from fire (Callaghan et al. 2011).

Vegetation

The Birch Creek Watershed contains a wide variety of habitats and conditions that allows an abundance of vegetation to thrive. However, only hardy species can survive in the extreme cold of winter and high heat of summer within the Birch Creek Watershed. The presence of permafrost, found discontinuously throughout the Birch Creek Watershed, also heavily impacts the type of species that can grow in certain parts of the Birch Creek Watershed. Permafrost can dictate the water availability in the region; therefore, it has a substantial influence on the types of vegetation that can grow. Warmer weather due to climate change has accelerated the permafrost

[3] Sediment transported by water.
[4] Sediment, generally silt and very fine sand, transported by wind from exposed sediment deposits.
[5] Organic material with high concentrations of carbon.
[6] Hallows or mounds on the land surface that form after permafrost thaws.
[7] Gradual sinking of an area of land.

thawing. These rapid thawing events also can lead to large erosion events, particularly along the riparian corridor, thereby affecting vegetation conditions (BLM 2021).

Lower in the Birch Creek Watershed, the valley bottoms widen and create a large range of conditions leading to a mosaic of habitats. Loamy soils with shallow layers of permafrost tend to drain poorly and they can lead to vegetation dominated by sedge tussocks (*Carex stricta*), low shrubs, and stunted black spruce (*Picea mariana*) woodlands. Better draining soils can support open forests of spruce (*Picea* spp.), white birch (*Betula neoalaskana*), and aspen (*Populus tremuloides*). Riparian corridors tend to be free of permafrost and they can support a wide range of tree species, including white spruce (*Picea glauca*), aspen, balsam poplar (*Populus balsamifera L.*), alder (*Alnus* spp.), and willow (*Salix* spp.) (BLM 2016b).

The Steese ROD and Approved RMP identified the following priority species and vegetation communities: aspen/steppe bluffs, riparian communities, wetlands (other than widespread mesic black spruce, tussock, and shrub tussock), tall shrub communities, sparsely plant-covered calcareous substrate (limestone), and lichen-rich habitat (BLM 2016b). **Table B-4**, Vegetation Communities in the Project Area, lists the vegetation communities' acres within the Birch Creek WSR Corridor.

Table B-4. Vegetation Communities in the Project Area

Vegetation Communities	Acres
Bare ground	1,300
Deciduous Forest (Open-Closed)	2,600
Dwarf Shrub	600
Fire Scar	1,800
Herbaceous (Aquatic)	0
Herbaceous (Mesic) (Interior Alaska, Cook Inlet Basin)	1,000
Herbaceous (Wet) (Interior Alaska, Cook Inlet Basin)	0
Low Shrub	3,100
Low Shrub/Lichen	200
Tall Shrub (Open-Closed)	1,900
Tussock Tundra (Low shrub or Herbaceous)	1,300
Urban, Agriculture, Road	400
White Spruce or Black Spruce (Open-Closed)	32,600
White Spruce or Black Spruce (Woodland)	12,000
White Spruce or Black Spruce/Lichen (Woodland-Open)	1,100
White Spruce or Black Spruce-Deciduous (Open-Closed)	7,300
Grand Total	67,300

Source: BLM GIS 2023
Non-vegetation acres have been removed from this table.
Acres are rounded to the nearest hundred.

Threatened and Endangered Plant Species

The Information for Planning and Consultation (IPaC) website does not list any threatened, endangered, or proposed species, or designated or proposed critical habitat within the proposed project location. Should any threatened, or endangered species be found, formal measures would be made to protect the habitat (BLM 1983). The proposed mmanagement objectives focus on habitat conservation and ensuring that approved activities do not contribute to the need to list any special status species.

Nonnative Invasive Plant Species

Nonnative invasive species or noxious weeds can alter vegetation communities by outcompeting native species for resources. Invasive species threaten biodiversity in habitats, and they can cause economic or environmental harm or harm to human health (ADFG 2023). A survey of nonnative invasive species was conducted across 54 sites within the Birch Creek WSR Corridor. Of the 54 sites, foxtail barley (*Hordeum jubatum L*) was found at two sites and white sweetclover (*Melilotus albus Medik*) was found at two other sites (BLM GIS 2023).

Wildlife

Migratory Birds

Birch Creek WSR is often surrounded by riparian vegetation, which is an important habitat for many songbirds, waterfowl, migratory birds, and raptors. Common migrants include Arctic loon (*Gavia arctica*), red-throated loon (*Gavia stellata*), common loon (*Gavia immer*), grebe (*Podicipedidae* spp.), and sandhill crane (*Grus canadensis*). Other species, such as hawks, owls, grouse, woodpeckers, gray jays (*Perisoreus* spp.), and common ravens (*Corvus corax*), stay during the winter. The United States Fish and Wildlife Service (USFWS) IPaC database search identified one bird of conservation concern (BCC) and the bald eagle that may occur in the Birch Creek WSR Corridor vicinity. The bald eagle is not a BCC in this area; however, it warrants attention because of the Bald and Golden Eagle Protection Act or for potential susceptibilities in riparian habitat or other waterways from certain types of development or activities. **Table B-5**, Birds of Particular Concern, shows the two birds identified by the USFWS IPaC, their breeding status in the region, and their habitat requirements. These birds of particular concern are discussed in additional detail below.

Table B-5. Birds of Particular Concern

Common Name	Scientific Name	Breeding Status	Habitat Requirements
Bald eagle	*Haliaeetus leucocephalus*	B	Breeding habitat most commonly includes areas close to coastal areas, bays, rivers, lakes, reservoirs, or other bodies of water that reflect the general availability of primary food sources. The food sources include fish, waterfowl, or seabirds. Nests usually are in tall trees or on pinnacles or cliffs near water. Tree species used for nesting vary regionally, and they may include pine, spruce, fir, cottonwood, poplar, willow, sycamore, oak, beech, or others. The same nest may be used year after year, or a pair may use alternate nest sites in successive years.
Olive-sided flycatcher	*Contopus cooperi*	B	Olive-sided flycatchers breed in various forest and woodland habitats including taiga, subalpine coniferous forest, mixed coniferous-deciduous forest, burned-over forest, spruce or tamarack bogs, and other forested wetlands. In addition, they could be found along the forested edges of lakes, ponds, and streams. Most nesting sites contain dead standing trees, which are used as singing and feeding perches. Nests are placed most often in conifers, on horizontal limbs 2-15 meters from the ground. During the northern winter, this species occurs in a variety of forest, woodland, and open situations with scattered trees, especially where tall dead snags are present.

Source USFWS 2023, NatureServe Explorer 2023
B: Breeding

Raptors

Raptors serve as important indicators of overall ecosystem health because they are keystone species at the top of the food web. Along Birch Creek WSR and in adjacent cliffs and bluffs, there are populations of nesting raptors, such as peregrine falcon (*Falco peregrinus*), gyrfalcon (*Falco rusticolus*), merlin (*Falco columbarius*), bald eagle, golden eagle (*Aquila chrysaetos*), and osprey (*Pandion haliaetus*) (BLM 2023b). Other raptors include rough-legged hawk (*Buteo lagopus*), northern goshawk (*Accipiter gentilis*), red-tailed or Harlan's hawk (*Buteo jamaicensis*), sharp-shinned hawk (*Accipiter striatus*), and northern harrier (*Circus cyaneus*) (ADFG 2015). The numerous songbirds and small mammal populations provide the primary prey base for raptors during the breeding and nonbreeding seasons.

Mammals

Common small mammal species that are widely distributed throughout the Birch Creek WSR Corridor and central Alaska include snowshoe hare (*Lepus americanus*), brown lemming (*Lemmus trimucronatus*), red-backed vole (*Myodes rutilus*), meadow vole (*Microtus pennsylvanicus*), shrews (*Sorex* spp.), and little brown myotis (*Myotis lucifugus*) (ADFG 2015). The megafauna found along Birch Creek WSR include moose (*Alces alces*), caribou (*Rangifer tarandus granti*), Dall sheep (*Ovis dalli dalli*), black bear (*Ursus americanus*), brown or grizzly bear (*Ursus arctos*), and gray wolf (*Canis lupus*) (BLM 2023a). These large mammal species are supported by the diversity of habitat and the availability of essential resources throughout the Birch Creek WSR Corridor. The success of species can be attributed to habitat conditions, availability of resources, and level of human disturbance activities.

There are critical periods during an animal's life cycle when they are particularly vulnerable to disturbances related to human activities. Degradation or unavailability of certain habitats will lead to significant declines in carrying capacity and/or numbers of wildlife species in question. An example of this is winter range where big game migrate to lower elevations to forage. Oftentimes they compete with other species for limited resources. Winter range and available resources can be limiting factors for population dynamics.

Big game species, such as moose and caribou, also are vulnerable during fawning and calving periods, as mothers tend to their young by providing food resources and protection from predators. Loss of winter range and fawning/calving habitat throughout the Birch Creek WSR Corridor could prevent the big game herds from achieving management objectives. While data is limited for many big game species, there is data available for caribou within the Birch Creek WSR Corridor. (See **Table B-6**, Caribou Distribution across the Birch Creek WSR Corridor, below, for acres of important wintering and calving habitat.)

Table B-6. Caribou Distribution across the Birch Creek WSR Corridor

Habitat Type	Acres
Known Calving Areas, Known Winter Use Areas	45,500
Known Winter Use Areas	22,300
Herd Ranges	54,800

Source: ADFG GIS 1985
Acres are rounded to the nearest 100.
There are 67,800 acres of known winter use areas. A total of 45,500 acres of the 67,800 acres are also known calving areas.

Threatened and Endangered Species, including Special Status Wildlife

The USFWS IPaC website does not list any threatened, endangered, or proposed species or designated or proposed critical habitat within the proposed project location.

Special status species include federally listed, State-listed, and BLM sensitive species. Management objectives include conservation of habitat and ensuring that approved activities do not contribute to the need to list any special status species. The BLM Alaska special status species list (BLM 2019) was developed from State lists, expert input (BLM, ADFG, or other partners), and the NatureServe global ranking system. Most habitat for special status plant species is currently undisturbed and largely intact. The potential for impacts on special status plant species is expected to increase as development and other ground-disturbing activities are expected to increase in the planning area. Important habitat for special status animals includes wetland and riparian areas and bluffs, which provide food, water, and cover necessary for many species. Species of concern in the Birch Creek WSR Corridor include bald and golden eagles that are protected by the Bald and Golden Eagle Protection Act. Other sensitive species found in the Birch Creek Watershed are peregrine falcon, gyrfalcon, trumpeter swan (*Cygnus buccinator*), olive-sided flycatcher, blackpoll warbler (*Setophaga striata*), rusty blackbird (*Euphagus carolinus*), short-eared owl, Osgood's Arctic ground squirrel (*Urocitellus parryii*), Alaska tiny shrew (*Sorex yukonicus*), and Alaska endemic mayfly (*Acentrella feropagus*).

Invasive Species

A species is considered an "invasive species" under Presidential Executive Order 13112 if it meets two criteria: (1) it is not native to the ecosystem in question and (2) its introduction has caused or is expected to cause harm to the economy, environment, or human health. Species are considered invasive in a new environment when the natural predators, diseases, or other biological mechanisms that kept the species in check in the previous habitat are absent in the new environment. Because this biological balance is lacking, an invasive species effectively changes the biodiversity of an area (ADFG 2023).

Invasive species that are most likely to affect wildlife populations in central Alaska are plant species such as *Elodea* spp. Also, the gypsy moth (*Lymantria dispar*) may occur in the Birch Creek WSR Corridor (ADFG 2015, 2023).

Physical characteristics of riparian habitat, including gravel bars with little vegetation and high light conditions, make these habitats vulnerable to invasive plant establishment, particularly in disturbed areas. The low biodiversity also raises the possibility that the spread of an invasive species' population may lead to the decline or eradication of native species. The river's designation attracts visitors from near and far who could inadvertently spread invasive species.

Climate-related changes to the landscape, such as warming and drying, may enable invasive plant and animal species to become established in the ecosystem. Invasive species on the landscape pose a significant threat to native wildlife, such as conversion to nonnative forage, competition for resources, predation, and disease (ADFG 2015).

Land Uses and Infrastructure

This section presents information about the current uses along the Birch Creek WSR.

Landownership within the River Corridor

The Birch Creek WSR is primarily in very remote and undeveloped sections of the Steese NCA. However, portions of the Birch Creek WSR are adjacent to the Steese Highway, Native lands, and privately owned parcels in its lower reaches near Circle, Alaska.

The BLM administers 97 percent of the Birch Creek WSR Corridor. Forty-one acres of inholdings are surrounded by the corridor. Approximately 37 acres of inholdings comprise one Alaska Native allotment. The remaining two inholdings are private and State lands. The inholdings were excluded from the Birch Creek WSR Corridor by ANILCA. See **Figure B-2** and **Figure B-3** for non-BLM-administered lands in the corridor.

The Birch Creek WSR Corridor is located 0.5 miles from the nearest general privately owned lands. Scoping revealed that there are concerns about trespassing occurrences on privately owned lands near the Birch Creek WSR Corridor by those participating in activities related to the WSR.

In 1972, Public Land Order (PLO) 5179, as amended by PLO 5250, withdrew Birch Creek from all forms of appropriation under the public land laws, including State and regional corporation selection, location and entry under the mining laws, and leasing under the Mineral Leasing Act of 1920. The PLO reserved land for study and for possible recommendations to Congress as units of national park, forest, wildlife refuge, and wild and scenic rivers systems. Specifically, it segregated "all lands within the protracted survey sections which are wholly or in part within 1 mile of the mean high-water mark of the river's banks."

In 1980, Congress passed the ANILCA, and ANILCA Section 603 amended WSRA Section 3(a) to include Birch Creek as a designated river. ANILCA Section 606(a) also amended the WSRA. It states the boundary shall include an average of not more than 640 acres per mile on both sides of the river (measured from the ordinary high-water mark). The boundary shall not include any lands owned by the State or a political subdivision of the State, nor shall such boundary extend around any private lands adjoining the river in such manner as to surround or effectively surround such private lands.

The 1983 River Management Plan (pages 10 and 11) proposed to modify PLO 5179 such that only those lands within the final WSR corridor would remain withdrawn. However, the proposed modification was never executed, so PLO 5179 remains in place. As a result, BLM-managed lands adjacent to the WSR corridor and within the protracted survey sections, which are wholly or partially within one mile of the bank of Birch Creek National Wild River, remain withdrawn. However, they are not part of the WSR corridor.

Access and Infrastructure

The Steese NCA is designated as OHV limited by the Steese TMP, and routes are opened on a seasonal basis. In the summer, there are 136 miles of managed routes open to motorized use, most of which are located north of the Birch Creek WSR Corridor (BLM 2022a). In the Birch Creek WSR Corridor, there are 75 miles of OHV routes that primarily follow the Birch Creek WSR, however, the Steese TMP prohibits summer OHV use in the Birch Creek WSR Corridor.

Most floaters begin their trip at the Upper Birch Creek Wayside (mile 94 of the Steese Highway), and they travel downstream approximately 110 miles to the Lower Birch Creek Wayside (mile 140.5 of the Steese Highway). Lower Birch Creek Wayside is at mile 140.4 of the Steese Highway.

Few historic structures and cabins blend with the landscape, offering points of interest. The upper reach of Birch Creek WSR offers opportunities to catch glimpses of historic cabins and hike to higher elevations for stunning views of the river system.

Management Direction

Wild and Scenic River Management

This Birch Creek WSR CRMP would replace the 1983 River Management Plan. This Birch Creek WSR CRMP would implement (not replace or modify) existing management direction (including goals, desired conditions, and management actions) contained in the Steese ROD and Approved RMP and the Steese TMP.

The management actions identified in **Table B-7** add specificity or prioritization to implement decisions made in the Steese ROD and will be applied in the Birch Creek WSR Corridor in order to protect and enhance the values for which the river was designated, including the ORVs, free flow, and water quality, as well as the wild designation of the corridor. Where not otherwise addressed, management direction in the Steese ROD and Approved RMP and in the Steese TMP still apply in the Birch Creek WSR Corridor without additional specificity or prioritization.

Table B-7. Birch Creek WSR Core Management Actions and River Values Supported

Resource Category	Management Action	Fisheries	Scenic	Recreation	Free Flow	Water Quality	Wild Designation
Fish and Aquatic Species	Management Action: Maintain instream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.	x			x	x	x
Fish and Aquatic Species	Management Action: The BLM would seek annual stream restoration funding to accomplish stream restoration work.	x			x	x	
Fish and Aquatic Species	Management Action: Minimize surface disturbance activities in the Birch Creek WSR watersheds, which have been shown to degrade water quality, to support aquatic vertebrate and invertebrate populations.	x				x	
Fish and Aquatic Species	Management Action: Require active revegetation during reclamation instead of natural recovery.	x				x	
Fish and Aquatic Species	Management Action: Subject to funding availability, prioritize and accelerate restoration actions in RCAs that contribute to the Birch Creek WSR.	x				x	
Fish and Aquatic Species	Management Action: Seek funding and work with the ADF&G and other interested partners to design and implement appropriate aquatic ecological studies.	x					

Resource Category	Management Action	Fisheries	Scenic	Recreation	Free Flow	Water Quality	Wild Designation
Fish and Aquatic Species	Management Action: In consultation with ADF&G, improve monitoring of fish demographics in relation to the "Strategic Science Plan for the Steese NCA and White Mountains National Recreation Area".	x					
Fish and Aquatic Species	Management Action: Based on results of base level monitoring, in consultation with ADF&G, identify needs for targeted monitoring relevant to local species or ecological functions. Pursue funding and partnerships to address those needs.	x					
Forest and Woodland Products	Management Action: Limit collection of special forest products to subsistence use, camp use, and personal use (i.e., berries, mushrooms, etc.). No commercial collection of special forest products would be permitted.		x	x			x
Forest and Woodland Products	Management Action: Disallow commercial salvage timber harvest in the WSR Corridor.		x				x
Recreation	Management Action: Develop enhanced interpretive materials to assist the public with planning recreation activities on the Birch Creek WSR (see public comment regarding need for such materials).	x	x	x			x
Recreation	Management Action: Ensure adequate instream flows to accommodate recreational opportunities.			x	x		
Recreation	Management Action: Evaluate up to two additional river access sites to be developed consistent with NLCS policy and wild classification.			x			x
Recreation	Management Action: Explore opportunities to build partnerships in Central and Circle to promote and enhance user experiences in the Birch Creek WSR. Also, foster appreciation of the natural and cultural heritage of the WSR.			x			
Recreation	Management Action: Conduct benefits-based management survey, VRM inventory, and wilderness characteristics inventory every 10 years.			x			

Resource Category	Management Action	Fisheries	Scenic	Recreation	Free Flow	Water Quality	Wild Designation
Recreation	Management Action: Programmatically allow up to 10 trips under SRPs of any type on the Birch Creek WSR Corridor in any given year. Existing SRPs would be included in the 10-trip allowance. All SRPs would be subject to the SOPs in **Appendix 1**. Additional trips (more than the 10 per year) may be authorized subject to proposal-specific analysis to address incremental cumulative effects.			x			
Recreation	Allow for up to one public use cabin in the Birch Creek WSR Corridor, consistent with wild designation and ORV enhancement, available for year-round reservation. Recommend completion of RAMP before evaluating sites.			x			
Soil Resources	Management Action: Enhanced recreation sites would be developed and designed to minimize new surface disturbances and mitigate erosion potential.	x				x	
Soil Resources	Management Action: Pursue opportunities for cooperative water quality monitoring with tribes, other government agencies, nongovernmental organizations (NGO), and citizen-science organizations.					x	
Vegetation Resources	Management Action: Inventory for opportunities to reclaim surface disturbances in the upper waters of Birch Creek and pursue funding to implement reclamation.	x				x	
Vegetation Resources	Management Action: Accelerated vegetation methods used in disturbed areas in the WSR Corridor or contributing areas.	x				x	
Vegetation Resources	Management Action: Use Interior Alaska Stream Quantification Tool to characterize riparian vegetation conditions.					x	x
Visual Resources	Management Action: Required VRM mitigation for all monitoring, science, and management activities, including recreation and visitor service facilities.		x				x
Water Resources, Wetlands, and Floodplains	Management Action: Establish long-term and continuous water resource monitoring to inform the BLM for pursuing water rights and enhancing water quality.	x		x	x		

Resource Category	Management Action	Fisheries	Scenic	Recreation	Free Flow	Water Quality	Wild Designation
Water Resources, Wetlands, and Floodplains	Management Action: Enhance water quality monitoring to detect additional pollutants (such as heavy metals, petroleum components, etc.), particularly those that may result from permafrost thaw.					x	
Wild and Scenic Rivers	Subject to resource availability, pursue exploration and application of relevant emerging science (such as, but not limited to, environmental DNA, advanced remote sensing, habitat potential modeling, and climate impact modeling) to enhance monitoring strategies and maximize protection and enhancement of ORVs and water quality.	x	x	x	x	x	
Wilderness Characteristics	Management Action: Work with the Department of Defense to seek solutions to aircraft flyovers and associated noise (see public comments in draft scoping report).		x				x
Wilderness Characteristics	Management Action: Protect the wild river character and the scenic ORV, while allowing for additional developed recreation sites and facilities that contribute to the recreation ORV.			x			x
Wildlife Resources	Management Action: Coordinate with ADF&G and other partners on inventory and monitoring to identify potential or ongoing impacts of enhanced recreation on wildlife and address conflicts through adaptive management.			x			

The management actions identified in **Table B-8** are consistent with protection and enhancement of the ORVs and other river values, area consistent with decisions made in the Steese ROD, and serve to further other relevant Bureau and Department policies. These management actions will also be applied in the Birch Creek WSR Corridor.

Table B-8. Birch Creek WSR Supplemental Management Actions and Policies Supported

RESOURCE CATEGORY	MANAGEMENT ACTION	BLM Manual 6400 - Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, Planning, and Management	BLM Manual 6100 National Landscape Conservation System Management Manual	604 DM 1 Implementing Landscape-Level Approaches to Resource Management	523 DM 1 Climate Change Policy
Soil Resources	Management Action: Work with interested partners to develop and implement a coordinated holistic watershed condition monitoring strategy for the Ikhèenjik River watershed.	x	x	x	x
Water Resources, Wetlands, and Floodplains	Management Action: Pursue funding for research focused on ecological connectivity and resilience in the Birch Creek and Ikhèenjik River watersheds, consistent with the "Strategic Science Plan for the Steese NCA and White Mountains National Recreation Area".		x	x	x
Lands and Realty	Management Action: Engage adjacent private landowners to develop strategies to discourage trespassing on private lands associated with use of BLM-administered lands in the WSR Corridor.	x	x	x	
Recreation	Management Action: Emphasize utilization of youth and veteran resources in developing and maintaining enhanced visitor services.		x	x	
Air and Atmospheric Values	Management Action: Seek opportunities to work with permafrost researchers to characterize carbon content of permafrost in the Birch Creek WSR Corridor, rate of permafrost thaw, and associated carbon emissions.		x	x	x

RESOURCE CATEGORY	MANAGEMENT ACTION	BLM Manual 6400 - Wild and Scenic Rivers - Policy and Program Direction for Identification, Evaluation, Planning, and Management	BLM Manual 6100 National Landscape Conservation System Management Manual	604 DM 1 Implementing Landscape-Level Approaches to Resource Management	523 DM 1 Climate Change Policy
Vegetation Resources	Management Action: Subject to funding availability, establish targeted Assessment, Inventory, and Monitoring Strategy monitoring sites in the WSR Corridor to monitor resource conditions and trends relative to landscape conditions.	x	x	x	x

In segments of the river that have been determined navigable, the BLM would pursue an agreement with the State with the goal of coordinating management to protect and enhance the values for which the river was added to the NWSRS.

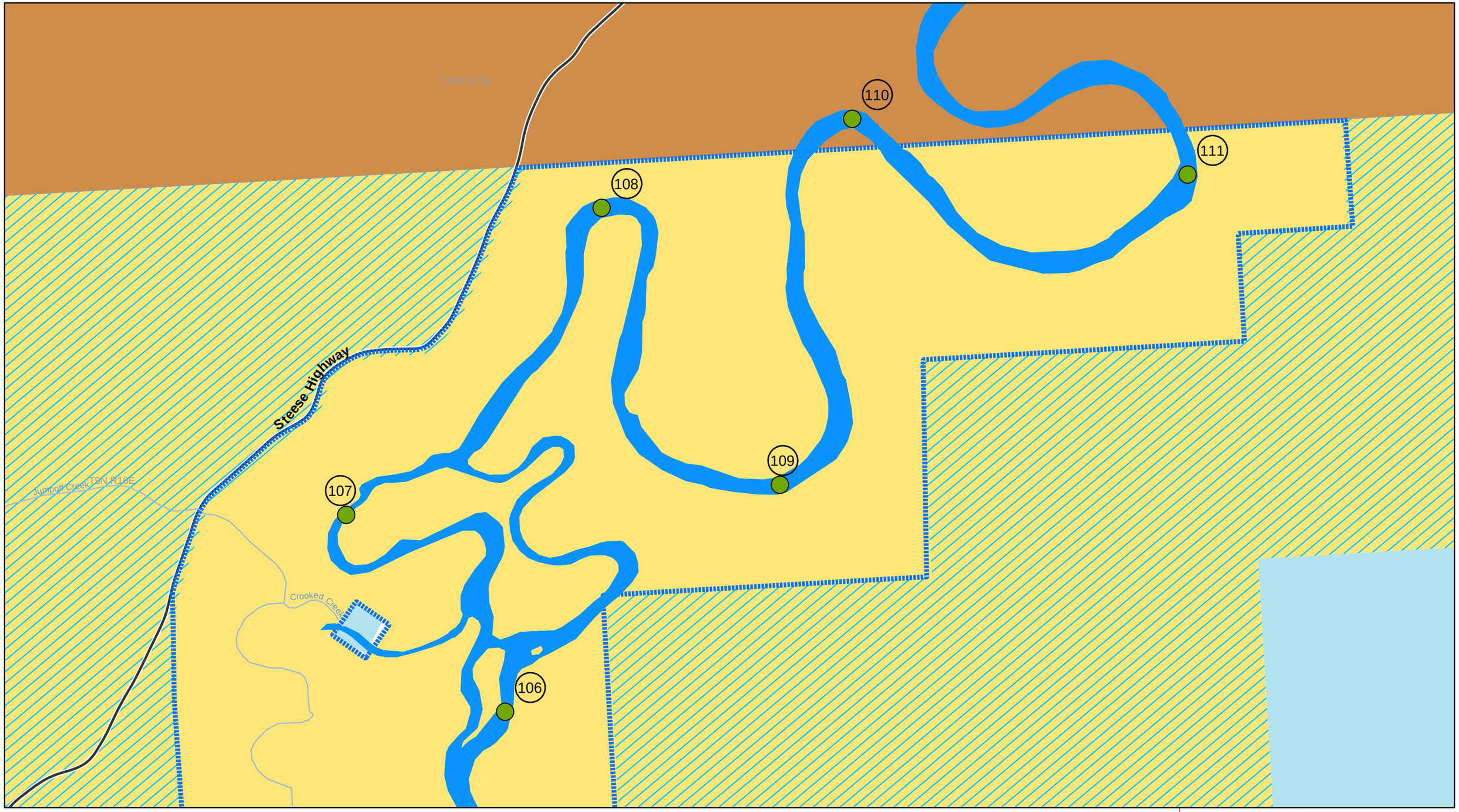


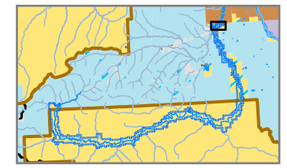
Figure B-2. State and Private Land in Birch Creek Wild and Scenic River Corridor

River mile | Wild and scenic river corridor | Township and range | State Selected

Administered Lands: Bureau of Land Management

State | Native Lands | Water

0 0.25 0.5 Miles



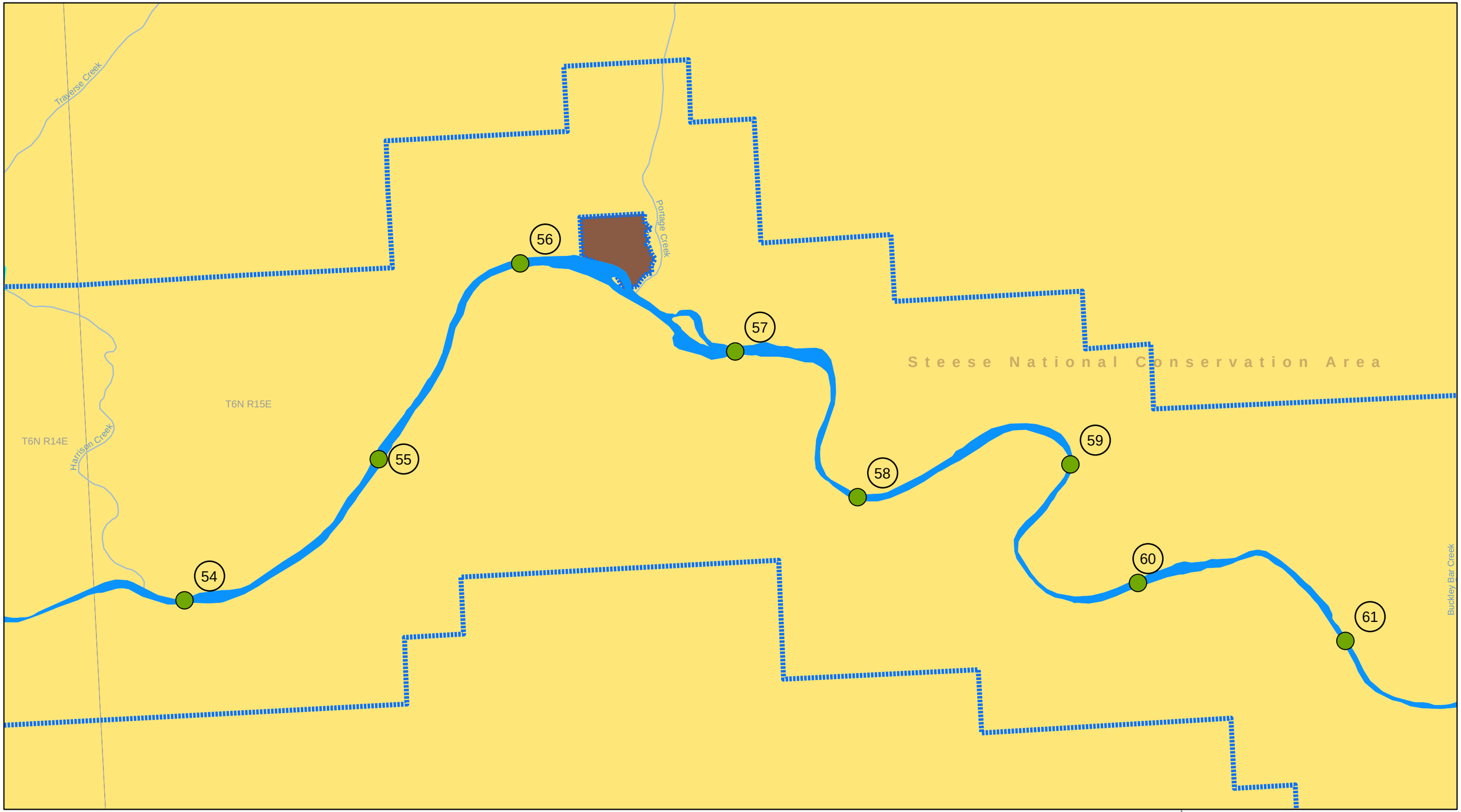


Figure B-3. Native Allotment Land in Birch Creek Wild and Scenic River Corridor

River mile

Wild and scenic river corridor

National Conservation Area boundary

Township and range

Unmaintained road or trail

Administered Lands

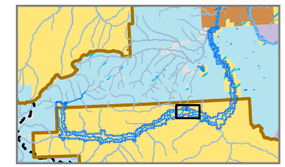
Bureau of Land Management

Native Allotment

Water

0 0.25 0.5 Miles

Disclaimer: No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification. The information displayed on this map should be used for graphic display only. For official land status information, refer to Cadastral Survey plats, Master Title Plats, and land status case-files.



Recreation User Capacity

It is important to note that this CRMP uses the term "visitor capacity" to be synonymous with the term "user capacity" (a required component for CRMPs per the WSRA and interagency guidelines). Section 3(d)(1) of the WSRA directs agencies to address visitor capacities in a CRMP to ensure that use levels in the river area do not threaten river values or established desired conditions.

The primary uses that Birch Creek supports include both motorized and nonmotorized boating (most motorized boating occurring in the lower stretches of the river), camping, fishing and hunting. Overall, visitor use within the Birch Creek WSR area is quite low and it does not appear to be threatening river values. Commensurate with this there has not been a large degree of investment in data collection, monitoring, and analysis to support visitor capacity estimates.

General use levels and types of use have remained consistent since 1983. Use levels can vary from year to year based on floating conditions, wildfire conditions, and game availability for hunting. A very modest increase is trending in the number of users. Aerial surveys are conducted as resources are available and were conducted in 2003 and 2004 by the BLM for visitor use to determine baseline use. Surveys were very limited in 2004 due to significant fire activity, which also likely limited the number of river users. The weekly surveys conducted in 2003 showed around 200 annual river users for that summer. The peak use month was September followed by June, July, and August in that order. The largest user group was nonmotorized float boating with a small number of motorboats that primarily use the lower section.

Currently, the use level of Birch Creek WSR is estimated between 300 and 400 users per year excluding short-term use of the put-in and take-out waysides and some isolated winter use, such as the Yukon Quest International Sled Dog Race. The BLM believes the use is nowhere near capacity and does not believe the use trend would approach capacity, given the current rates for 20 years, if not longer.

Current interactions between recreation users are low, and evidence of recreation users is minimal. This situation has minimized potential user conflicts. No on-site recreation management controls are evident. Three commercial groups or other groups are authorized to operate on the Birch Creek WSR, but they typically do not conduct more than one annual trip between them. The only two developed recreation sites on the Birch Creek WSR continue to be the put-in site at the beginning and the take-out site near the end.

Desired conditions for river values and the wild classification are as follows.

- For a wild classification, recreation use, including, but not limited to, hiking, fishing, and boating, is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed, subject to applicable law and regulation, where necessary to protect and enhance the wild river value (BLM Manual 6400).
- Use of a national wild river must be managed to protect those values that caused the river to be designated as a component of the NWSRS.
- In December 2016, the ROD was signed for the Steese RMP. In the decision, the ORVs for the Birch Creek WSR were established; these ORVs are recreation, fisheries, and scenic.

- In the Steese RMP decision, the entire Steese NCA and the Birch Creek WSR were established as a special recreation management area (SRMA). The Birch Creek WSR was designated as a semiprimitive RMZ within that SRMA. Management goals are defined in the RMP for the Birch Creek RMZ.

The recreation focus for the Birch Creek RMZ is to provide high-quality, multiday recreational float boat opportunities for users who desire a recreation experience characterized by solitude, tranquility, self-reliance, challenges, and risk in a semiprimitive, Interior Alaska river setting. Some of the characteristics with which to manage this RMZ include:

- Manage for a very high probability of experiencing solitude, closeness to nature, tranquility, self-reliance, challenge, and risk.
- Provide a naturally appearing landscape with a low level of noticeable modifications.
- Maintain rustic facilities that are generally constructed using natural materials and designed to blend with the surrounding landscape.
- Have an average number of contacts per day usually fewer than four groups.
- Manage for group sizes that usually average fewer than four people per group.

These characteristics, developed in the Eastern Interior RMP, provide for some management discretion while providing guidelines to help manage within the intended recreation experience.

Monitoring would typically consist of routine river patrols ensuring there is no significant disturbance and tracking the number of groups and group sizes. Occasional surveys would occur to ensure the BLM is meeting the RMZ objective as listed in the Steese RMP for the RMZ. It states that participants in visitor assessments report an average of 4.0 realization of the targeted experience and benefit outcomes as listed (above) on a probability scale where 1=not at all realized and 5=totally realized.

Currently, the BLM does not feel that any of these thresholds are at risk. Visitor capacity estimates recognize the likelihood that visitor capacity decisions may need to be reviewed and revised as more data becomes available. Adaptive management associated with this CRMP would determine if a re-examination of visitor capacities is needed. If in the future, events or actions begin to threaten these thresholds, the BLM would begin with initiating an educational campaign and/or more frequent river patrols to remedy the situation before attempting to take more formal actions. Adaptive management could include increased annual monitoring trips if issues or concerns were identified or if thresholds to meeting the WSRA or ORV of the Birch Creek WSR are being threatened.

Monitoring and Implementation

Baseline Monitoring

The WSRA does not explicitly require monitoring for designated rivers. However, BLM policy requires monitoring in BLM Manual 6400 (Wild and Scenic River Management) and Manual 6100 (National Landscape Conservation System Management). The BLM Manual 6400 instructs the BLM to develop a monitoring strategy to ensure desired conditions are maintained or that management activities are adapted accordingly for WSRs.

Monitoring is an important aspect of protecting and enhancing a river's values (free-flowing condition, water quality, and ORVs). Monitoring is the periodic and ongoing measurement of

specific variables related to a resource condition or river corridor experience. It proactively tracks conditions and trends and assesses the effectiveness of various management actions. The condition of river values and resources is currently monitored and managed in various ways.

The BLM planning regulations require the monitoring and evaluation of RMPs at appropriate intervals. The Steese ROD and Approved RMP were completed in 2016. After approval of the RMP and signing of the ROD, an implementation schedule was completed, and it incorporated monitoring plans. As a part of adaptive management, monitoring data is used to assess resource conditions, identify resource issues and conflicts, determine if resource objectives are met, determine trends for achievement of desired conditions, and periodically refine and update desired conditions and management strategy.

Monitoring provides essential information on the relative success of management strategies. The implementation of the RMP is monitored to ensure that management actions follow prescribed management direction (implementation monitoring), meet desired objectives (effectiveness monitoring) and are based on accurate assumptions (validation monitoring).

Monitoring is coordinated with other appropriate agencies and organizations to enhance the efficiency and usefulness of the results across a variety of administrative units. The approach builds on past and present monitoring work. In addition, specific monitoring protocols, criteria, goals, and reporting formats are developed.

The BLM would continue monitoring in accordance with the adaptive management strategy outlined in Appendix B, Fisheries and Aquatic Resources, of the Steese ROD and Approved RMP. The BLM would utilize the watershed matrix in Appendix B of the Steese ROD to assist in site-specific project impact analysis and mitigate impacts identified as potentially degrading to watersheds. Also, monitoring would continue to identify thresholds, triggers, or periods in which decisions made in the CRMP would be evaluated to determine whether they are still valid and what courses of action to take if they are not. **Table B-9**, Birch Creek WSR Baseline Monitoring, identifies base level monitoring to ensure compliance with the WSRA. It should be noted that the BLM may decide to conduct additional monitoring, other than what is outlined within, subject to resource availability.

Table B-9. Birch Creek WSR Baseline Monitoring

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Fisheries ORV	Habitat connectivity (including fish passage)	Native fishes can access historically occupied habitats. Levels of large, woody debris (amount and size) are near-natural levels for in-channel, along stream banks and floodplains. Maintain and protect habitat access by ensuring no human-made or natural barriers impede upstream and downstream fish passage at all flow regimes.	Identify cause of inaccessibility (e.g., woody debris levels and barriers) and mitigate impacts (e.g., barrier removals), restoring connectivity. If any of these scenarios are observed during float trips, a fish biologist would conduct further assessment of the areas where these conditions are present.	While conducting annual floats, the BLM staff would visually monitor for any obstructions of passage, including woody debris levels and barriers within the river. If these conditions are observed, BLM staff may take height measurements of the barrier. The BLM would also measure and GPS any glaring woody debris piles.	Steese ROD Fish-7 and Fish-9

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Fisheries ORV	Streambank stability (including quality and quantity of vegetation in riparian habitat)	Streambank stability greater than 95 percent for Rosgen channel types A, B, and E; greater than 90 percent for Rosgen channel type C within 80 percent of any stream reach. Percentage of riparian vegetation into the green line dominated by late-seral community types or anchored rocks/logs is more than 80 percent (good-excellent ecological condition).	Identify cause for bank instability and mitigate impacts, restoring bank stability and reducing sediment degradation. Revegetation may be required to maximize streambank stability. Determine cause of riparian vegetation decline and assess whether impacts can be mitigated. Enact reestablishment efforts to recover vital vegetation necessary for high bank stability. Alternatively, rocks and logs may serve as temporary mitigation methods. If any of these scenarios are observed during float trips, an ecologist and hydrologist would conduct further assessment of the areas where these conditions are present. Implement BLM multiple indicators monitoring technique or other appropriate methodology to ensure streambank stability.	While conducting annual floats, BLM staff would visually monitor for any observations of streambank instability and gaps in vegetation quantity or quality along the river.	Steese ROD Fish-7 and Fish-9

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Fisheries ORV	Fish population – species presence and health	Maintain the variety of species within the river and maintain the river's quality to support continued habitation.	The BLM would consult with the ADF&G to determine appropriate action and seek funding to implement corrective actions.	Subject to resource availability, coordinate with ADF&G to conduct periodic surveys of fish population status.	
Recreation ORV	Semiprimitive recreation classification	Average number of contacts per day usually fewer than four groups. Majority of group sizes average fewer than four people per group. Only minimal evidence of human impact.	If the standards of maintaining a "semiprimitive" setting are not being met, the BLM would consider adaptive management options, including promoting educational measures, increasing enforcement actions, requiring removal of all human waste by permitted users, and limiting or adding additional requirements to commercial/permitted use on the river.	At least one annual river recreation survey would be conducted on the river to document and ensure the BLM is maintaining the standards for semiprimitive management of those resources. The BLM would also monitor and collect casual observation at the put-in and take-out sites and use remote sensing devices, such as motion cameras and counting devices, to collect and determine use levels. While on river patrol, the BLM would collect data on group sizes, the number of other groups encountered, established camping sites, and evidence of trash and human waste. When thresholds may be close to exceeding the standards or the BLM deems it necessary, a more comprehensive visitor use and experience received study may be conducted in accordance with the Visitor Use Management Framework developed by the Interagency Visitor Use Management Council (https://visitorusemanagement.nps.gov/).	

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Scenic ORV	Natural landscape	Preserve the Natural Landscape and maintain a Class I VRM quality, as outlined in the BLM's H-8410-1, Visual Resource Inventory.	If the standards of maintaining Class I VRM are not being met, the BLM would identify those actions impacting the visual quality and develop mitigation actions to correct it.	At least one annual VRM survey would be conducted on the river to document any changes to scenic quality.	

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Free-Flowing Condition[8]	Streamflow magnitude, frequency, duration, and timing are consistent with climate and natural watershed features.	The BLM follows WSRA Section 7 procedures to determine whether projects above or below, or within the Birch Creek WSR Corridor or on its tributary streams, would unreasonably diminish the free-flowing condition or unreasonably diminish one or more of the designated Birch Creek WSR ORVs—Scenic, Recreation, and Fisheries.	If a proposed project is found to have a direct and adverse effect on the Birch Creek WSR free-flowing condition or on any of the ORVs, the project would not be approved. Project redesign and resubmittal for a subsequent Section 7 determination would be required. If previously approved projects are determined to be unreasonably diminishing free-flowing conditions or one or more of the ORVs, the BLM would use existing authorities to modify approval terms and conditions to implement mitigation measures. If unapproved projects or activities are determined to be unreasonably diminishing free-flowing conditions or one or more of the ORVs, the BLM would use existing authorities to remedy the issue.	Monitor daily streamflow at the upstream (RM 0) and downstream (RM 126) extent of the 126-mile Birch Creek WSR. Annually monitor existing projects and activities for unexpected or unplanned diminishment of the free-flowing condition or unreasonably diminishment of one or more of the designated Birch Creek WSR ORVs.	Goal: Maintain and enhance the free-flowing condition of Birch Creek There are no reservoirs or diversions in the watershed that would reduce flood flows or increase/decrease base flows. Birch Creek streamflow records, from the late 1980s to present, document variability of streamflow magnitude, frequency, duration, and timing are consistent with adjacent watersheds.

[8] All hydrological related monitoring would benefit the fisheries ORV.

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Water Quantity	Average monthly flow rates (discharge) in cubic feet per second (cfs)	The WSRA directs that each component of the NWSRS shall be administered to protect and enhance the values that caused it to be included in said system. Section 13(c) of the WSRA includes implicit language that a federal reserved water right for WSRs may be asserted. Recommended monthly average water reservations for selected locations on Birch Creek are outlined above in **Table B-1**.	If evidence suggests a federal reserved water right is being injured by water uses by other parties, the BLM shall consult with the State's Water Resources Management Office, Office of the Solicitor (Department of the Interior), and Department of Justice to determine how the federal reserved water right claim can be asserted and protected. Until such a time comes that a federal reserve water right is necessary, it is the BLM's policy to use the state's appropriate instream flow water right process for protecting instream flows quantities. Protect the natural flow regime through water reservations, as outlined in **Table B-1** above.	Monitor daily streamflow at the upstream (RM 0) and downstream (RM 126) extent of the 126-mile Birch Creek WSR. Continue monitoring streamflow in support of the 2001 Birch Creek Instream Flow Water Reservation application with the State of Alaska DNR.	Goal: Secure adequate instream flow quantities to protect and enhance watershed resources including the ORVs of recreation, scenic, and fisheries. Understanding the baseline rates, volume, and timing of surface water flow is an essential aspect of determining the extent to which future management actions may protect and/or enhance streamflow and water-dependent ORVs.

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Water Quality	State of Alaska Water Quality Standards (18 AAC 70)	WSRA: Each component of the NWSRS shall be administered to protect and enhance the values that caused it to be included in said system. Parameters are State of Alaska freshwater water quality criteria for turbidity, pH, temperature, and dissolved oxygen.	The BLM works closely with the ADEC to document water quality and remedy actions or incidents that may adversely impact water quality and ORVs.	Current water quality monitoring strategy is to operate two (2) long-term stream gage stations equipped with automated multi-parameter water quality meters recording daily water temperature, specific conductivity, pH, and turbidity at the beginning and end of the 126-mile Birch Creek WSR. Additional discrete water quality measurements are collected during float trips, every 1 to 3 years at the confluence of major tributaries.	Goal: Protect and enhance water quality and water related features of scenic, recreation, and fisheries ORVs. Monitoring water quality conditions proactively tracks conditions and trends and helps assess the effectiveness of various management actions.

The BLM's current monitoring for the Birch Creek WSR, beyond collecting water quality and flow data, involves an annual trip (usually mid-summer) on the Birch Creek WSR. Often, additional monitoring is done on specific sections of the Birch Creek WSR. Monitoring is typically done by floating the Birch Creek WSR. At times, it is also conducted by air or remote sensing equipment. Monitoring is typically focused on ensuring the BLM is meeting requirements of the WSRA as well as the goals and objectives of the Steese RMP. Items observed during monitoring trips may include the following:

- Documenting both natural and human-made disturbances along the Birch Creek WSR; identifying natural disturbances that can help provide safety information to public users; and identifying human-made disturbances, such as trespass issues or campsite development, that can help initiate corrective agency actions.
- Conducting condition assessments of recreation, cultural, or other agency resources.
- Conducting visitor use surveys, which include level of use, group size, number of daily group encounters, and type of transportation.
- Monitoring compliance of authorized use, including special recreation permit (SRP), of the Birch Creek WSR and documenting any unauthorized use of the Birch Creek WSR.

Current use guidelines are provided through the semiprimitive RMZ designation as decided in the Steese RMP, which covers all of the WSR. The "semiprimitive" prescription includes managing average group size, not to exceed four people, and managing average group contacts per day as less than four. These guidelines should inform the BLM if it is nearing a use capacity threshold.

CRMP Monitoring Strategy

Monitoring is essential to protecting river-related values. The monitoring strategy objective is to protect Birch Creek WSR's free-flowing condition, water quality and quantity; protect ORVs; and address visitor use. Ongoing studies and monitoring data would help the BLM determine if management actions are necessary to protect river values from degradation.

This section identifies activities that would be conducted to assess the progress and results of implementing the CRMP. Monitoring is important to ensure that changes stay within acceptable levels and would not compromise the protection and enhancement of the river values.

For each river value to be monitored, indicators are selected that inform managers about changes in the ecosystem or social setting. When possible, monitoring indicators already being collected for other management purposes were selected to help assure the attainability of this monitoring plan.

For each key indicator, a threshold (or standard to meet) is set. This threshold value indicates the point at which river management objectives are no longer met. Then, action would be taken to meet the standard. In most cases, the existing low use in Birch Creek WSR means that current conditions of many indicators are all far from needing action to meet standards. In cases where limited data is currently available, reaching a threshold could result in further investigation, monitoring, and evaluation. Monitoring is listed in **Table B-10**, Birch Creek WSR Monitoring Strategy. These monitoring actions would be in addition to those actions in the baseline monitoring above in **Table B-9**, Birch Creek WSR Baseline Monitoring.

Table B-10. Birch Creek WSR Monitoring Strategy

Value	Key Indicator	Standard to Meet	Action if Not Met	Monitoring Method and Frequency	Notes
Fisheries ORV	Refugium	Maintain or exceed baseline condition for refugia within watershed.	Determine cause in baseline conditions and mitigate impacts. Refugia conditions coincide with other indicators listed here and should be used to assess the condition of refugia.	Conduct qualitative analysis counting available refugium Note: Indicators listed here denote aspects of refugia considered valuable for fisheries.	N/A
Water Quality	State of Alaska Water Quality Standards (18 AAC 70)	WSRA: Each component of the NWSRS shall be administered to protect and enhance the values that caused it to be included in said system. Parameters are State of Alaska freshwater water quality criteria for turbidity, pH, temperature, and dissolved oxygen.	The BLM works closely with the ADEC to document water quality and remedy actions or incidents that may adversely impact water quality and ORVs.	Under Alternative B, in addition to continuing water quality monitoring at two (2) long-term stream gage stations, the monitoring program would be expanded to include continuous monitoring of three (3) legacy placer-mined tributaries identified by the BLM as high-priority restoration watersheds: Twelvemile Creek, Clums Fork, and Harrison Creek. Where turbidity levels persistently exceed water quality standards, restoration would be undertaken as funding allows.	Goal: Enhance and expand water quality monitoring program to address anthropogenic driven resource issues and risks with a focus on holistic ecosystem resilience. Goal: Protect and enhance water quality and water related features of scenic, recreation, and fisheries ORVs.

Implementation

Regulatory Authorities

The following summarizes responsibilities and authorities of various agencies relative to activities within the WSR corridor.

The BLM's management of WSRs is outlined in Manual 6400, Wild and Scenic Rivers–Policy and Program Direction for Identification, Evaluation, Planning, and Management. The manual contains the BLM's policy and program direction for the identification, evaluation, and

management of eligible and suitable WSRs and the management of designated components of the NWSRS.

The BLM shares management responsibilities with the National Marine Fisheries Service and the US Fish and Wildlife Service for protecting Endangered Species Act-listed species and their associated habitat. Fisheries is an ORV for the Birch Creek WSR due to the presence of critical habitat for many fish species.

The ADF&G is responsible for the sustainable management of fish and wildlife throughout Alaska regardless of landownership. ANILCA Section 1314 affirms the State's authority to manage fish and wildlife on public lands. The ADF&G's mission is grounded in the Alaska constitution and Alaska statutes; this mission is to protect, maintain, and improve the fish, game, and aquatic plant resources of the state and manage their use and development in the best interest of the economy and the well-being of the people of the state, consistent with the sustained-yield principle. The BLM coordinates with the ADF&G for the management of fish and wildlife.

The EPA develops and enforces regulations that implement environmental laws enacted by Congress, including those associated with the federal Clean Water Act. The EPA has the authority to implement pollution control programs. The BLM cooperates 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 ADEC, Division of Water oversees the federal Clean Water Act for the state and is responsible for establishing water quality standards, managing the Alaska Pollutant Discharge Elimination System permit program, and identifying waters that do not meet water quality standards under Clean Water Act Section 303(d) (impaired waters). The Birch Creek WSR is a 303(d)-listed stream. Approximately 1 mile of the Birch Creek WSR is listed as impaired for turbidity. The EPA issued a total maximum daily load (TMDL) for total settleable solids to meet turbidity water quality criteria. The BLM coordinates with the ADEC on all proposed activities that involve discharges into surface waters to ensure BLM-authorized activities do not exceed State of Alaska water quality standards.

The Alaska Department of Natural Resources, Division of Mining, Land and Water authorizes water rights. A water right is a legal right to use surface or subsurface water under the Alaska Water Use Act. A water right allows a specific amount of water from a specific water source to be diverted, impounded, or withdrawn for a specific use. In addition to managing water rights, the State of Alaska owns and manages the submerged lands under navigable waterways across the state. In 2001, the BLM filed an instream flow water reservation application with the State of Alaska for the right to reserve recommended monthly average instream flows.

Management Actions to Protect and Enhance

Section 10(a) of the WSRA requires that river-administering agencies protect and enhance the river values for which a segment was designated. Currently, the BLM is unaware of any conditions within the river corridor that are adversely impacting the ORVs. However, to ensure this requirement is met, the CRMP includes proposed non-ground-disturbing inventory actions. The CRMP also includes potential management actions to ensure the river values are protected and enhanced into the future. The potential management actions may require additional site-specific review prior to implementation.

Evaluation of Water Resource Projects

Section 7 of the WSRA directs federal agencies to evaluate federally assisted or permitted water resource projects to ensure existing conditions of designated river values (for example, free-flowing condition, water quality, and ORVs) are not diminished. No Section 7 water resource projects have been identified at this time. If water resource projects are identified later, they will meet the requirements of Section 7 of the WSRA and NEPA prior to implementation.

Wild and Scenic River Corridor Boundary

The WSRA requires that each federally administered river in the NWSRS have a legally established boundary. Establishing a WSR boundary that includes identified river-related values is essential as a basis from which to provide necessary protection. The 1983 River Management Plan for the Birch Creek WSR adheres to Section 606 of the ANILCA. ANILCA Section 606(a) states the boundary shall include an average of not more than 640 acres per mile on both sides of the river (measured from the ordinary high-water mark). The boundary shall not include any lands owned by the State or a political subdivision of the State, nor shall such boundary extend around any private lands adjoining the river in such manner as to surround or effectively surround such private lands. This CRMP does not alter the boundary; rather, it more clearly documents the boundary using current mapping capabilities that were not available when the ANILCA designated the Birch Creek WSR.

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Appendix 1: Standard Operating Procedures for Special Recreation Permits in the Birch Creek WSR

All SRPs in the Birch Creek WSR will be subject to the following standard operating procedures:

- Limit the group size to 12 persons.
- Clean all equipment, including boot soles, rafts, and tents, to assure they are free of nonnative seeds and plant parts before beginning the trips. Also, be reminded that all footwear with felt or fibrous soles is no longer allowed for sport fishing or hunting in Alaska's waters (http://www.adfg.alaska.gov/static/species/nonnative/invasive/pdfs/felt_soled_waders_faq.pdf).
- Retrieve or deal with all trash and human waste accordingly using established facilities or by "Leave No Trace" guidance. Use a portable toilet system.
- Use campsites with human or naturally hardened sites. Clean camp areas of all litter before departure.
- Respect wildlife: Do not feed animals and avoid disturbing them from natural activities. Take all reasonable precautions to avoid attracting wildlife to food and garbage. Remove garbage and properly dispose of it to prevent habituation of wildlife or alteration of populations. The BLM also recommends the use of bear-proof and/or odor-proof containers to prevent habituation of bears and other wildlife.
- Limit firewood collection to dead and down wood. Scatter all dead ashes, preferably on the gravel bars or rocky areas. Likewise, scatter all leftover wood around the area.
- Avoid camping in areas that result in disturbance of nesting birds of prey (raptors). Some nesting raptors (such as peregrine falcons and bald eagles) will often indicate disturbance by vocalizing loudly, and they often circle above people; however, gyrfalcons and golden eagles typically will not. Minimize human activity and avoid camping within 500 yards of nests for bald and golden eagles, peregrine falcons, and gyrfalcons. Nesting season is April 15 through August 15 for bald and golden eagles and March 15 through July 20 for gyrfalcons.
- Conduct all operations in such a manner as not to cause damage or disturbance to any archaeological or paleontological resource, or places of cultural or religious significance. The Antiquities Act (1906), National Historic Preservation Act (1966), Federal Land Policy and Management Act (1976), Archaeological Resources Protection Act (1979), Paleontological Resources Preservation Act (2009), and general United States property laws and regulations all prohibit the appropriation, excavation, collection, sale, or destruction of any historic properties or objects, or vertebrate fossils situated on lands owned or controlled by the federal government (54 USC 320302, 54 USC 300101 et seq., 43 USC 1701 et seq., 16 USC 470aa–470mm, 16 USC 470aaa, 43 USC 1733(a), 18 USC 1361, 18 USC 641, and 43 CFR 8365.1). These include both

prehistoric and historic archaeological sites and associated artifacts, including, but not limited to, stone tools, modified bone, antler, ivory, or wood material; campfire rings; stone cairns; cabins, other structures, and their ruins; mining equipment; refuse dumps; and vertebrate fossils (the bones of prehistoric animals). Should any such site be discovered during field operations, avoid impacting the location and materials, immediately notify the BLM Authorized Officer, and provide the global positioning system coordinates and photographs of the identified resource(s).

- BLM Alaska Standard Stipulations for Invasive Plant Species Management:
    - Ensure all equipment, vehicles (for example, trucks, trailers, watercraft, and aircraft), and gear are free of visible soil, seeds, and vegetative parts before deploying to the project site and before moving from areas of known priority invasive plant infestations. The priority invasive plant list is updated periodically and will be provided to permittees annually.
    - For operations in waterbodies, when moving equipment or personnel through waterbodies on the way to the project site or before transporting watercraft and aquatic gear (including, hip boots, waders, and bait containers) to the authorized use area:
        - Remove any aquatic plants, animals, and mud attached to the watercraft and equipment.
        - Drain water from the boat, motor, bilge, live wells, and bait containers, and spray all watercraft and equipment with high-pressure water or dry them for at least 5 days.
        - Report the species, location, and size of infestation (number of plants/area of infestation) of any nonnative or invasive plants that are incidentally observed to the BLM Authorized Officer.

Appendix 2: Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ADF&G	Alaska Department of Fish and Game
ANCSA	Alaska Native Claims Settlement Act
ANC	Alaska Native Corporations
ANILCA	Alaska National Interest Lands Conservation Act of 1980
BCC	bird of conservation concern
BLM	Bureau of Land Management United States Department of the Interior
CFR	Code of Federal Register
CRMP	comprehensive river management plan
EA	Environmental Assessment
EIFO	Eastern Interior Field Office
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
IPaC	Information for Planning and Consultation
NCA	National Conservation Area
NEPA	National Environmental Policy Act of 1969
NHD	National Hydrographical Survey
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
NRCS	Natural Resources Conservation Service
NWSRS	National Wild and Scenic Rivers System
PLO	Public Land Order
ORV	outstandingly remarkable values
RMP	Resource Management Plan
RMZ	Recreation Management Zone
ROD	Record of Decision
TCPs	traditional cultural properties
TMP	Travel Management Plan
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resource Management
WSRA	Wild and Scenic Rivers Act of 1968
WSR	Wild and Scenic River

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Appendix 3: References

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