



**NATIONAL
CONSERVATION
LANDS**

Alaska

Steese

National Conservation Area

Annual Manager's Report—Fiscal Year 2017



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1

Steese NCA Profile

Designating Authority: Alaska National Interest Lands Conservation Act (ANILCA)
P.L. 96-487

Date of Designation: December 2, 1980

In the Alaska National Interest Lands Conservation Act of 1980 (ANILCA), 1,208,624 acres were designated as the Steese National Conservation Area (SNCA). Congress directed the BLM to consider the special values of caribou range and Birch Creek in the management of the SNCA.

In ANILCA Title VIII Section 802, Congress declared that fish and wildlife on Federal lands in Alaska be managed for subsistence uses. Federal land managers in Alaska manage subsistence harvest of fish and wildlife on unencumbered Federal lands.

The SNCA comprises two units, a north and south unit, separated by State of Alaska lands and the Steese Highway (AK-6). The NCA contains Birch Creek Wild and Scenic River (WSR), of which 77 of the total 126 miles flows through it. Designated as a Wild river, the river possesses a free-flowing and pristine condition.

Acreage

| | |
|----------------------------|-----------|
| Total Acres in Unit | 1,208,624 |
| BLM Acres | 1,208,624 |
| Other Federal Acres | 0 |
| State Acres* | 0 |
| Private Acres* | 0 |

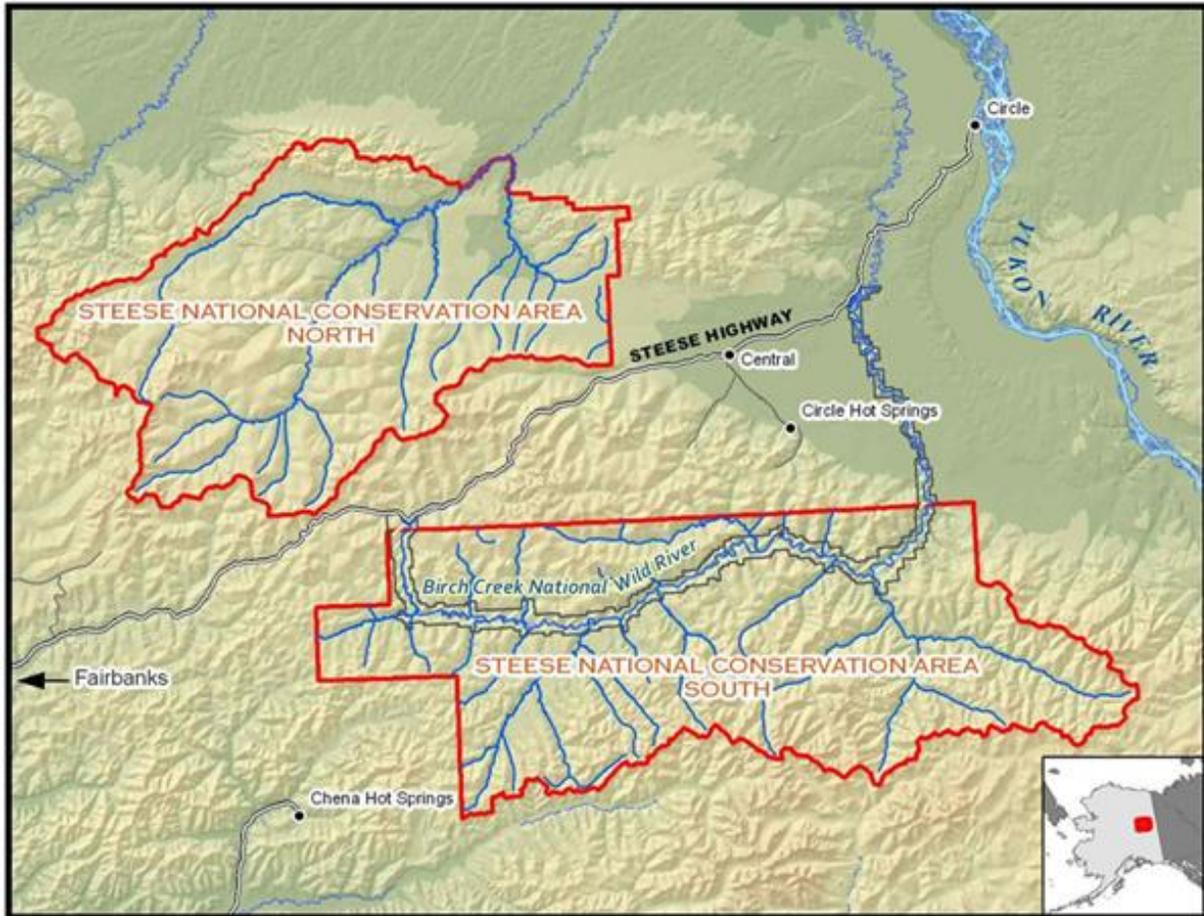
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| District Office Name | Fairbanks | District Office Name | Fairbanks |
| State Office Name | Alaska | State Office Name | Alaska |

Budget

| | |
|---|-----------|
| Total Fiscal Year 2017 Budget | \$531,305 |
| Subactivity 1711 | \$470,002 |
| Other Subactivities' Contributions | \$61,303 |
| Other Funding | \$ 0 |

Map of Steese NCA



Managing Partners

Interagency work to study the migration and health of the caribou herd occurs annually with Alaska Department of Fish and Game (ADF&G) and Canada's Yukon Department of Environment. To perform mine site cleanup work, the BLM collaborates with Alaska's Department of Environmental Conservation (ADEC).

Staffing

Staffing for the Steese NCA's interdisciplinary team comes from the Eastern Interior Field Office (EIFO) with support staffing from the Fairbanks District Office (FDO) and Alaska State Office. Staff positions and workload percentages are listed below:

| Position | Series/Grade | % Time Dedicated | Home Office* |
|---|--------------|------------------|--------------|
| Field Manager | 0340/13 | 10 | FO |
| Law Enforcement | 1801/11 | 20 | FO |
| Assistant Field Manager/ Resources | 0340/12 | 10 | FO |
| Assistant Field Manager/ Visitor Services Steese NCA Manager | 0340/12 | 20 | FO |
| Archaeologist | 193/12 | 20 | FO |
| Fish Biologist | 0482/11 | 10 | FO |
| Hydrologist | 1315/11 | 10 | FO |
| Physical Scientist | 1301/11 | 10 | FO |
| Realty Specialist | 1170/11 | 10 | FO |
| Wildlife Biologist | 0486/12 | 10 | FO |
| Wildlife Biologist | 0486/11 | 50 | FO |
| Wildlife Biologist (Term) | 0486/7 | 40 | FO |
| Outdoor Recreation Planner | 0023/11 | 50 | FO |
| Interpretive Park Ranger | 0025/7 | 50 | FO |
| Mining Engineer | 0880/9 | 10 | FO |
| Geologist | 1350/7 | 20 | FO |
| District Manager | 0340/14 | 10 | DO |
| Budget Analyst | 0560/11 | 10 | DO |
| NLCS State Office Lead | 0301/13 | 10 | SO |

* FO: Field Office / DO: District Office / SO: State Office

2 Planning and NEPA

Status of the Resource Management Plan

Record of Decision (ROD) and Approved Resource Management Plan, December, 2016

With completion of the Steese ROD in 2016, the Field Office shifts its attention to planning for RMP implementation.

Status of Activity Plans

Recreational Activity Management Plan, October 1993

River Management Plan (Birch Creek National Wild and Scenic River), December 1983

Transportation Management Plan (TMP)

There is no Travel Management Plan for the SNCA. The current OHV area designation is limited, except for Research Natural Areas (RNAs), which are Closed. A Notice of designated OHV areas for the SNCA was published in the Federal Register July 15, 1988.

To implement the new RMP, staff started drafting supplemental rules for publication in the Federal Register to implement the interim travel management rules. The new rules will remain in effect until completion of the TMP, which will set the direction.

SNCA staff began travel management planning in FY18. Route evaluations and public scoping meetings begin 2018. Logan-Simpson Design, Inc. received the contract to assist BLM in preparation of the TMP.

Status of the RMP Implementation Strategy

An implementation strategy will be initiated and developed in FY 18.

Completed 2017 National Environmental Policy Act Actions and Projects

| NEPA Number | Project Name | Project Applicant | Project Description |
|-------------------------------------|---|---------------------|---|
| DOI-BLM-AK-F020-2016-0006-CX0032-CX | USAF North Master C ROW | USAF | Renew right-of-way grant for an unmanned Threat Emitter site. |
| DOI-BLM-AK-F020-2017-0007-EA | Rod's Alaskan Big Game and Wilderness Guide Service | Mr. Rodney Pangborn | Issue a special recreation permit for guided hunting trips in the White Mountains NRA and Steese NCA. |

| NEPA Number | Project Name | Project Applicant | Project Description |
|-----------------------------------|---|---------------------------------|--|
| DOI-BLM-AK-F020-2017-0008-DNA | Yukon Quest Sled Dog Race | Yukon Quest International. Ltd. | Add a new checkpoint to the special recreation use permit for the Yukon Quest International Sled Dog Race. |
| DOI-BLM-AK-F020-2017-0017-DNA | Arctic River Guides Special Recreation Permit | Arctic River Guides | Special recreation permit to conduct guided float trips on Beaver and Birch Creek National Wild and Scenic Rivers. |
| DOI-BLM-AK-F020-2017-0017-0022-EA | Arctic Dog Adventures Co. Special Recreation Permit | Arctic Dog Adventures Co. | Special recreation permit to conduct winter guided dog mushing tours and skiing tours in the White Mountains NRA and South Steese Unit NCA |

3 2017 Projects and Accomplishments

General Accomplishments

Work conducted in the SNCA focused primarily on multiple agency partners for caribou monitoring, Birch Creek water quality and cleanup, and subsistence management. This work satisfies the National 15-Year Strategy Theme 1: Ensuring the Conservation, Protection, and Restoration of NLCS Values.

Current Areas of Focus

The following are descriptions of the areas of focus in 2017. Many of these projects will continue into 2018 and beyond.

Harrison Creek Abandoned Mine Land (AML) Clean Up

The Harrison Creek drainage has been periodically placer mined since the late 19th century. Federal regulations requiring mining reclamation were not enacted until 1981, consequently, both historic and contemporary mining impacts remain due to miners abandoning operations upon the completion of mining activity. Aside from tailings piled throughout segments of Harrison Creek, these abandoned operations often contain equipment, structures, hazardous waste and other miscellaneous debris. This describes the state of a portion of abandoned and voided claims on Harrison Creek prior to cooperative reclamation efforts executed by the BLM field office and BLM's Alaska Fire Service. Clean up by BLM and AFS included removal of an abandoned trailer, numerous pieces of inoperable equipment, and scattered solid waste. Though much of the disturbance to the Harrison Creek drainage remains, these efforts mark a positive step in its restoration.

Project pictures show the effort and planning required for the Harrison Creek clean up. Items removed from the site include a furnace, a smoker, tanks and fuel drums, household appliances, wood debris and a trailer painted with lead-based paint (not pictured).



Loaders haul out solid waste debris and remove contaminated soils from the site

Caribou Monitoring and Subsistence Management

The SNCA received heavy use historically as a calving area for the Fortymile Caribou Herd. In 1920, this herd was estimated to be 570,000 animals, but declined to an estimated low of 6,500 in the 1970s, by which time the herd used only a fraction of its former range. In 1994 an interagency, international group was formed with the goal of restoring the herd into its former range from north of Dawson City, Yukon through the Steese NCA. During the last decade, caribou expanded their range back into both units of the Steese NCA. Sightings along the Steese Highway are once again common, and a large portion of the herd calved in the Birch Creek drainage in 2016. The herd expanded tenfold in numbers from 1973 to 2015. Biologists now have concerns about the ability of the range to support these high numbers. The herd's moderate condition suggests a lack of nutrition. In addition, a small White Mountains caribou population exists in the SNCA and increasingly mixes with the expanding Fortymile herd. The mixing of the herds complicating sport and subsistence harvest management due to the different rules required for the general public and subsistence hunters, such as enforcement of access means and hunting seasons.

In ANILCA Title VIII, Section 802, Congress directed a subsistence purpose and priority for fish and wildlife management on Federal lands in Alaska. Federal land managers in Alaska manage subsistence harvest of fish and wildlife on unencumbered Federal lands. ANILCA Title IV, which designated this area as the SNCA. ANILCA identified this caribou habitat as a special value in the SNCA. The Eastern Interior Field Office Manager has responsibility and authority to make in-season changes to Federal caribou hunts. This includes changing the caribou harvest limit, or making emergency closures. To inform the actions the BLM biologists forged a partnership with the ADF&G to conduct population, distribution, harvest, and habitat monitoring. The Fortymile Caribou herd remains the most important caribou subsistence resource in eastern Interior Alaska. Close coordination among the BLM, ADF&G, National Park Service, and the ANILCA-mandated Regional Advisory Councils ensures proper management of the harvests, herd, and range habitat.

Birch Creek

The BLM and ADEC continue to collaborate on a multi-year monitoring project. Initiated in 2014, the project documents flows and water quality for two adjacent placer-mined watersheds, Crooked Creek, primarily on State land, and the Birch Creek watershed, which includes the Birch Creek WSR and the South Unit of the SNCA. Assisting ADEC with watershed assessment remains a high priority for the BLM because Crooked Creek is a major tributary to Birch Creek WSR, and headwaters of the Crooked Creek watershed abut the eastern boundary of the North Unit of the SNCA.

In support of ongoing cooperative monitoring programs, BLM installed a new automated stream gage with Geospatial Operational Environmental Satellite (GOES) telemetry in 2017, about 0.25 miles upstream of the BLM Birch Creek Wayside at Mile Post 94 Steese Highway. Data collection of water stage, water temperature, air temperature, cumulative precipitation and water turbidity occurs at 15-minute intervals. Hourly data is available for public viewing at the following NOAA websites:

https://hads.ncep.noaa.gov/cgi-bin/hads/interactiveDisplays/displayMetaData.pl?table=dcp&nesdis_id=32B3986C

Flow information is available here:

[NOAA Hydrometeorological Automated Data System \(HADS\)](#)

Enter the NESDIS ID = 32B3986C or the NWSLI ID= BCTA2.

Providing real-time climate and streamflow data through the newly installed stream gauge represents a major benefit to recreational boaters planning float trips for fishing, hunting, and wildlife viewing. Floatability improves with additional water in the Creek. Stage of less than 1.0 foot is very low flow, making it difficult for floating. Stage of 2 feet is moderate flow, representing good float conditions, and stage of 3 to 3.5 feet is nearly bank full, thus reducing gravel bar camping opportunities.

Preacher Creek

In support of ongoing cooperative monitoring programs, BLM installed and operated an automated, multi-parameter water quality meter during summer 2017 at the confluence of Preacher and Bachelor Creeks. The meter recorded water temperature, conductivity, pH, and turbidity (NTU) at 15-minute intervals. Preliminary review shows Preacher Creek water quality, for the period of record, in compliance with State of Alaska water quality standards.

Continued inventory and monitoring of Preacher Creek and Birch Creek watersheds contributes to understanding water quantity and quality impacts from regional placer mining and from thawing of permafrost.

Placer Mine Reclamation Effectiveness Monitoring

Fish biologists continued to monitor the rehabilitation of stream and riparian habitats at four placer gold mining operations within the SNCA. Surface disturbing activities associated with this land use activity are intensive. For example, the placer mining often uses heavy equipment that strips away all of the channel-stabilizing vegetation and requires relocation of the active stream to a temporary bypass channel. After relocation of the active stream, mining commences by excavating the overburden material (10-25 vertical feet) from the original stream channel or floodplain down to bedrock. Processing the excavated material extracts the gold.

After mining has ended, the BLM requires a mine operator to reclaim the area by re-routing the stream to its original location and regrading and reshaping the mined area to blend with surrounding topography. Work includes reconstructing a stable stream channel and rehabilitation of fish and wildlife habitat, which includes the revegetation of disturbed areas.

To evaluate stream reclamation success, staff use several methods. Methods include: 1) semi-permanent photo points, 2) visually estimating the riparian vegetation complexity, 3) establishing and evaluating information from surveying three cross sectional and one longitudinal profile of the stream channel, 4) conducting one Bank Erosion Hazard Index (BEHI) survey of the entire stream reach, and a 5) conducting a survey of the bed material composition.

The stream and riparian conditions monitored in 2017 showed little change from previous years and three of four of the sites have not achieved the reclamation requirements. The lack of streambank riparian vegetation indicates a primary deficiency for a stable stream channel and rehabilitation of fish habitat. Other deficiencies include the lack of bed form diversity (pools and riffles or other structures that dissipate stream flow energy), streambank erosion levels that measure in the high-to-extreme category, and bank height ratios that indicate the stream remains disconnected from its floodplain.

Monitoring indicates more successful techniques are necessary for future reclamation projects. Monitoring shows that the simplistic reclamation techniques used at these sites do not create sufficiently stable stream conditions for many years. In interior Alaska, the commonly used approach of restoring a “pilot channel” in the low spot in the valley, then reliance upon natural stream and revegetation processes to recreate a stable stream channel takes decades. The BLM incorporates lessons learned from monitoring these reclaimed streams into the education provided to miners. The BLM’s monitoring continues until completion of the stream’s reclamation.



This reclamation occurred in 2010. Lateral stability, bedform diversity, and riparian vegetation are not trending towards proper functioning condition. Floodplain vegetation, not riparian, emergence indicates a lack of vegetative trend.



This reclamation occurred in 2014. Lateral stability, bedform diversity, and riparian vegetation are not functioning. The channel lacks stability, as illustrated by formation of the mid-channel sand bar.

Steese White Mountains Soil Surveys:

Cooperation between BLM and the Natural Resources Conservation Service (NRCS) began in 2010 to complete an initial soil survey of the Steese NCA. This work continued into 2017. Surveys also included the BLM White Mountains National Recreation Area (WMNRA), totaling over 2 million acres. These surveys combine NRCS work done in the Yukon-Charley Rivers National Preserve (NPS) to the north and the Yukon Flats National Wildlife Refuge (USFWS) to the east. The survey includes a full description of the soils and ecological site conditions. The selected field sites represent the topographic positions, geological materials and vegetative communities within the area. Sampling of approximately 500 sites occurred in the Steese NCA and WMNRA. Access to this huge roadless area occurred via helicopter, ATV and raft. Passenger vehicle access occurred rarely and only along the Steese Highway and the few existing primitive roads in the NCA.

Since 2015, the BLM has provided up to three botanical interns and one Soil Scientist for one month each year to assist with this project, which ended in 2017. The University of Alaska - Fairbanks contributed a soil science professor and permafrost specialist from 2015 to 2017. The NRCS plans to finish the report in 2018. The soil survey reports guide future restoration, engineering or any other science, which requires use of soil resources.

Recreation Focus in FY 17

The Pinnell Mountain National Recreation Trail (PMNRT) continues to see robust use. The two shelter cabins along the 27-mile hiking route receive routine maintenance. In June, a SCA trail crew worked on the PMNRT to harden the trail by distributing gravel along four miles of trail near Eagle Summit.

The BLM administers Special Recreation Permits for Boy Scouts of America Midnight Sun Council, Yukon Quest International Sled Dog Race, Arctic River Guides, Rod's Alaskan Big Game and Wilderness Guiding Service, and the U.S. Army for recreational activities in the SNCA.

EIFO personnel conducted a float patrol of Birch Creek WSR in August of 2017. The team of two floated 110 miles in an inflatable canoe, investigated river conditions at low water levels, cleaned-up debris, and monitored resources. Highlights from the eight-day trip include a pair of King Salmon in Birch Creek above Acme Creek, a family of river otter, and several pairs of Peregrine Falcons and Merlin.

The NCA administrative site in Central, AK received routine maintenance in 2017.

Recreational Use

The BLM recorded recreational users in the SNCA for Birch Creek WSR, the Pinnell Mountain National Recreation Trail, and the waysides at Twelvemile Summit and Eagle Summit, as well as dispersed use. Visitor use increased an estimated 2.5% from the previous year. Staff reported 62,147 visitor days for the NCA, including Birch Creek, for the year.

Education, Outreach, and Interpretation

Outdoor Days

BLM staff participated in the interagency Outdoor Days for the Fairbanks North Star Borough School District. The three-day event offered 566 sixth-grade students a chance to engage with public land managers to learn about outdoor professions such as archeology, fisheries, wildland fire fighting, and recreation management.

Adventure Camp

SNCA staff assisted Fairbanks North Star Borough with a youth day camp, teaching an introduction to map and compass skills and Leave-No-Trace practices.

Digital Public Information Maps

This March, BLM Alaska published a free digital map of the SNCA, specifically designed for use on mobile devices. The new map provides improved access information for the SNCA and aids public safety due to its utility of real-time position tracking without a cellular signal. The maps and the associated mobile application use the device's internal GPS.

Partnerships

The BLM's management of the SNCA benefits from partnerships with a number of groups. These are described below.

Alaska Department of Fish and Game

The BLM collaborated with ADF&G to monitor the Fortymile and White Mountains caribou herds, including periodic telemetry flights to monitor distribution and conduct calving surveys, censuses, and fall composition counts. GPS and VHF radio collars remain essential tools for conducting these surveys and study sources of mortality and habitat selection. Through partnerships with ADF&G and Yukon Department of Environment, biologists deployed more than 100 VHF and GPS collars, on FMCH calves, cows and bulls this year. The Fortymile herd has continued to utilize the Steese NCA during winter and to make greater use of the Steese NCA during summer and fall. Monitoring indicates some

Fortymile caribou calving, for the second consecutive year, in the Clum's Fork calving area. Use in the area had not occurred since the 1970s. Additional range expansion occurred in October 2017 with the bulk of the herd moving northwest through the Steese NCA into the White Mountains NRA and beyond Beaver Creek, into an area not used by the herd since at least 1992.

Yukon Department of Environment

BLM, ADF&G, the Yukon Department of Environment, and the NPS (Yukon-Charley National Preserve) increased cooperative management efforts on the FMCH through expanding its focus on monitoring and science needs. With these partners, BLM biologists started projects to map lichen abundance throughout the herd's entire range and assess resource selection and habitat relationships. A cooperative agreement with the University of Montana provides the necessary field work staff (see Science section).

As numbers caribou have recovered, biologists expected the herd to expand into historical habitats in the Yukon region of Canada. In 2017, the Yukon Department of Environment increased its participation in herd monitoring through their purchase of GPS radio collars. The multi-agency partnership studied the herd's activity. It was concluded that range expansion occurred dramatically in 2013, where the majority of the Fortymile Caribou Herd made an abrupt and unusual migration east across the Alaska-Yukon border and continued east into the Yukon.

In cooperation with ADF&G and Yukon Department of Environment, BLM participated in a broad field effort to collect biological samples from hunter-harvested caribou. During hunting season near the Steese highway area, ADF&G sampled more than 100 animals. Sampling focused on assessing nutritional condition, health, and food habits. This information will assist the BLM in assessing the overall health of the herd and its habitat.

Alaska Department of Environmental Conservation (ADEC)

The BLM and the ADEC conduct cooperative water quality and stream flow assessments throughout the Steese NCA. Continuous inventory and monitoring ensures that essential aspects of water quality and quantity remain protected while informing management of any adverse impacts from the area's placer mining. Additionally, the team documents the effects of increasing annual temperatures.



Part of a team of biologists from Alaska Department of Fish and Game, Yukon Territory Department of Environment, and BLM collect biological samples and measurements from a hunter-killed Fortymile caribou, near Eagle Summit. This effort focused on assessing nutritional condition, health, and food habits.

Volunteers



In June 2017, the SNCA hosted a six-person Student Conservation Association (SCA) trail crew to work on the Pinnell Mountain National Recreation Trail. The crew distributed gravel along 4 miles of trail near Eagle Summit to harden the trail.

Land (or Interests in Land) Acquisitions

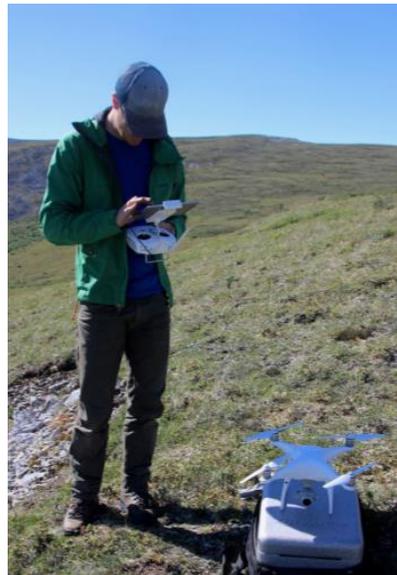
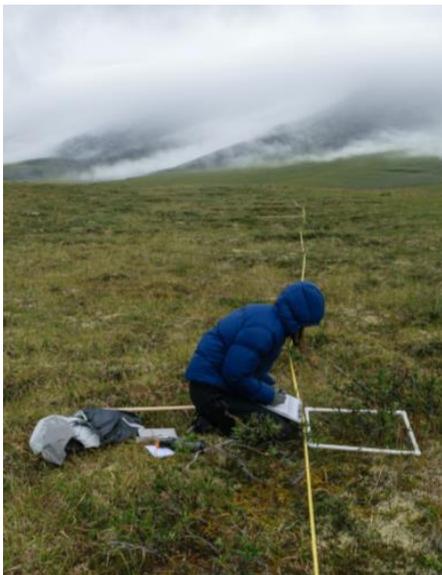
No lands or interests in land were acquired in FY17.

4 Science

Science

Lichen Mapping

In FY15, the BLM and several cooperating agencies including NPS, USGS, and the Yukon Department of Environment, began a project to map lichen cover to identify caribou habitat in the SNCA and across the range of the Fortymile Caribou Herd. The agencies work with a contractor, ABR Inc., to produce a contiguous map across Alaska and Yukon. In 2017, BLM worked with ABR and the University of Montana to obtain very high-resolution photography using Unmanned Aerial Vehicles (UAS) to aid in quantifying lichen cover. Staff then compared the UAS photos to satellite imagery. The Canadian government supplemented this effort through their continued lichen mapping work in the Yukon.



Eric Palm, NASA ABoVE Animals on the Move project member and University of Montana PhD student, quantifies lichen cover in plots and utilizes a UAV to capture high-resolution photography used to develop and improve mapping of lichen cover over the entire historical Fortymile Caribou Herd range in Alaska and Yukon Territory.

Caribou Resource Selection and Habitat Relationships

The BLM, ADF&G, Yukon Department of Environment, and NPS cooperate to track and understand how the Fortymile Caribou Herd utilizes habitats and how those habitats influence populations. In 2016, the BLM established a Cooperative Agreement with the University of Montana through the Rocky Mountains Cooperative Ecosystem Study Unit to fund a graduate-level project to further study caribou habitat. Activities in 2017 focused on project development and included an interagency project-planning workshop and several field trips for project personnel. The team used drone aircraft to perform lichen mapping, initial data gathering and analyses. The drones provided sub-centimeter pixel size photography.

EIFO and partner wildlife biologists continued efforts to document and monitor caribou food habits through collection of fecal and rumen samples. In addition, staff tested a new tool to determine food habits and habitat selection. In April, the team deployed one radio collar, with an attached video camera, on a caribou cow. The special collar successfully

tested this new method of observing food habits and forage and habitat selection. The partners plan to deploy thirteen more of these next generation collars in 2018.



Libby Ehlers, University of Montana PhD student, carries field gear during a late summer field trip to assess condition of Fortymile caribou habitat.

Science Plan

During 2016, EIFO staff initiated the Steese NCA Science Plan. The NCA manager and a term employee lead an interdisciplinary science plan team. The team gathered information and publications on past and present science projects conducted on the NCA. The plan will be consistent with the National NLCS Science Strategy and the BLM expects to complete the science plan in FY18.

5 Resources, Objects, Values, and Stressors

Caribou Range

Upon the SNCA's establishment in 1980, Congress directed the BLM to consider the special value of caribou range in the conservation area's management. Two caribou herds occupy lands within the SNCA. The White Mountains Caribou Herd resides year-round in the White Mountains NRA and SNCA North Unit, while the much larger Fortymile Caribou Herd seasonally occupies the North and South SNCA units, the WMNRA and lands to the southeast. In 1920, an estimated 570,000 Fortymile caribou crossed the Steese Highway to calving grounds in the WMNRA and North Unit of the Steese NCA. Numbering about 72,000 caribou today, the Fortymile herd remains one of Alaska's most important herds for subsistence and sport harvest. Interagency monitoring includes caribou numbers, productivity and survival, movements and distribution, food habits, and assessment of vegetation from ground plot to satellite imagery scales.

Caribou Range Status and Trend Table

| Status of Resource, Object, or Value | Trend |
|--------------------------------------|--------|
| Good | Stable |

Caribou Range Inventory, Assessment, Monitoring Table

| Acres in Unit | Acres Inventoried | Acres Possessing Object | Acres Monitored in FY |
|---------------|-------------------|--|-----------------------|
| 1,200,000 | 1,200,000 | 100% of unit has suitable caribou range. However, the herd moves throughout the unit as indicated in the narrative above | 1,200,000 |

Birch Creek

In 1980, Congress directed the BLM to consider Birch Creek's special value in management of the SNCA and designated the 126-mile-long corridor as a Wild and Scenic River (WSR). Extensive mining for placer gold has occurred in the Birch Creek drainage since the late 1800s. Early gold operations mined streambed gravels, in many cases from valley wall to valley wall, with little or no reclamation. No Federal mining claims currently exist within the Birch Creek WSR corridor, although abandoned mine lands exist in some areas. Upper Birch Creek and several small tributaries, located primarily on State of Alaska land, received listing under the Clean Water Act as impaired waters for excess turbidity. Placer mining operations that lacked erosion and effluent control measures have been the principle cause of elevated turbidity levels. Although recent regulatory enforcement has

improved water quality downstream of the active mines, protecting Birch Creek water quality continues to be a substantial challenge.

Birch Creek WSR Water Quality Status and Trend Table

| Status of Resource, Object, or Value | Trend |
|--------------------------------------|-----------|
| Fair | Improving |

Birch Creek WSR Water Quality Inventory, Assessment, Monitoring Table

| Acres in Unit | Acres Inventoried | Acres Possessing Object | Acres Monitored in FY |
|---------------|-----------------------|-------------------------|---------------------------------|
| 87,393 | 126 (miles monitored) | 100% | 87,393 126 (miles monitored) |

Stressors Affecting Caribou Range and Birch Creek

Mining Activity

Of the six approved federal mining operations in the SNCA, three actively mine. Non-point source pollution affecting water quality in Birch Creek remains an issue for water quality on all operations. Other mining issues include solid waste cleanup and reclamation.

Abandoned Mine Reclamation

Many areas of the SNCA received mining with little or no reclamation ever completed. Abandoned placer mines need reclamation to return to useful habitat. Reclamation requires the reestablishment of native vegetation and restoration of a natural, stable channel form.

Current/Future Mining on Non-BLM Managed Lands

The SNCA and Birch Creek headwaters area is highly mineralized and of interest for further exploration and development by the mineral industry. The headwaters area comprises mixed ownership of BLM and state managed lands, which both contain active mining claims. Mining activity upstream and adjacent to the SNCA’s boundary always has potential degrade water quality and the aquatic/fish resources within the SNCA. Monitoring and enforcement of mitigation measures, and use of improved mining and reclamation techniques, aims to reduce the adverse impacts to the resources within the SNCA.

Regional Temperature Trends

The SNCA landscape increasingly shows impacts of rising annual temperatures. The most notable impacts include vegetation changes, especially from more frequent wildfires, and soil instability associated with the continual loss of permafrost.

Caribou Populations

Caribou population, movements, and distribution monitoring continue through interagency cooperation. Caribou can degrade range quality through overuse. Habitats are monitored at varying scales – from ground plots to satellite imagery. Understanding the interaction of weather changes, fire, caribou population and distribution across habitats as well as caribou productivity and survival are all important in managing the herd and their habitat. Managing caribou on the NCA helps maintain its purpose and fulfills ANILCA requirements to provide subsistence hunting opportunities.

6 Summary of Performance Measure

| Resources, Objects, and Values Status Summary Table | | |
|--|---------------|--------------|
| Resource, Object, or Value | Status | Trend |
| Birch Creek WSR Water Quality | Fair | Improving |
| Caribou Range | Good | Stable |

The basis for the determination of the status and trend for Birch Creek Water Quality includes:

- a) In 1996, streams within the upper Birch Creek drainage received a rating of “water quality limited” due to violations of the turbidity standard, from both point and non-point sources associated with placer mining activities. Available water quality data indicated that waters of upper Birch Creek above Twelvemile Creek persistently exceeded the criteria for turbidity. The Environmental Protection Agency (EPA) subsequently issued a Total Maximum Daily Load (TMDL) for turbidity of 5.85 Nephelometric Turbidity Units (NTU) for upper Birch Creek (USEPA, 1996).
- b) Data from BLM and ADEC cooperative investigations spanning 2014-2017 shows improved water quality for upper Birch Creek. Causes for the improvement include the establishment of natural vegetation in disturbed areas, better mining practices, and more consistent agency compliance inspections of active mines.
- c) In 2017, automated monitoring at the Birch Creek MP 94 stream gage, documented daily median turbidity levels of less than one NTU, well within the TMDL of 5.85 NTU.
- d) Reducing placer mine impacts to Birch Creek water quality represents an ongoing challenge; however, the general observation is that water quality is improving overall. While stable turbidity measurements endured through most of 2017, several periods of elevated turbidity occurred from point sources, including active placer mines. Nonpoint sources added turbidity including abandoned placer mines, stream bank erosion, and re-suspension of deposited sediment. This continues to be problematic. Example events include a June storm runoff which breached an abandoned placer-mine settling pond resulting in several days of elevated turbidity (>25 NTU), and in September, turbid discharge from an active placer-mine resulted in turbidity exceeding 25 NTU.

The basis for determination of the status and trend for caribou range includes:

- a) The habitat within the caribou herd range is largely intact. Long-term vegetation plots monitored in 2007 and 2012 show a variety and abundance of forage during summer. Subsequent observations during other fieldwork indicate lichen over most of the Steese appears relatively lightly used. Over the past five years, the Eagle Summit area shows signs of use and disturbance (trampling). Disturbance indicates heavy use, but not to the level that biomass is negatively affected.
- b) Although recent fires have removed many spruce-lichen stands, which provide important winter forage areas, the remaining forest and alpine lichen-rich habitats used in winter are common.
- c) As the herd grows, it may experience a decline in nutritional condition, simply based on an observed long-term declining trend in pregnancy rates among three-year old cows. This does not necessarily indicate a degraded habitat condition within the Steese NCA.
- d) Summer use of the Steese NCA is increasing. The areas of highest summer use by caribou occur mostly south of the Steese NCA. .
- e) Research data indicates caribou summer and winter diets remain high in lichen.

Reference:

U.S. Environmental Protection Agency. 1996. Total maximum daily load for turbidity in Upper Birch Creek, Alaska: TMDL issued by U.S. Environmental Protection Agency, accessed at <http://www.dec.state.ak.us/water/tmdl/approvedtmdls.htm>

7 Manager's Letter

Transition and change will be the continued themes for the Steese National Conservation Area. My staff spent considerable energy finalizing the Steese NCA's Resource Management Plan. The Record of Decision was signed in December 2016 and we are now focusing on the RMP implementation plan and developing a Transportation Management Plan.

Subsistence hunting on Federal lands in Alaska will continue to grow in importance for rural Alaskans. While we continue to manage caribou habitats in the Steese NCA, we collaborate with partners to manage harvests and habitats on a regional/landscape level.

As was noted in the report, we are finalizing our Science Plan. That plan covers the Steese NCA as well as the adjacent White Mountains National Recreation Area (WMNRA), also managed by the Eastern Interior Field Office. Despite a focus on developed recreation in the WMNRA, the connection between the two areas' natural resources includes caribou migration and calving. Developing a plan to address the resources and opportunities of both areas will assist us in managing this habitat at a larger scale and allow us to better track the science and data collection in both areas. The science plan will focus on research partnerships. With the new science grant procedures required nationally, we hope to identify research partners and opportunities, monitor their work and highlight their findings, and the data will help inform management decisions.

The Assistant Field Manager for Visitor Services now holds an additional title of Steese NCA Manager. This manager has performed these duties in the past and will continue performing the official management responsibilities.

As we transition into 2018, we are encouraged by the opportunities ahead to implement RMP decisions and finalize a science plan for this unique and important resource.



NATIONAL CONSERVATION LANDS

Steese

National Conservation Area

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