Proposed Actions at Denali National Park and Preserve: National Historic Preservation Act (NHPA) Assessments of Effects

2025

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Visitor Resource Protection (VRP)/Superintendent's Office

1. Seasonal Installation of Two FAA Weather Cameras, Kahiltna Glacier (2022-2026)

Description: This project would permit seasonal installation and removal of two weather cameras for up to 5 years (2022-2026), following a successful trial period of operation during the 2015 - 2016 seasons and initial 5-year implementation (2017-2021). The previous iteration of this project included a location on the Ruth Glacier. This project only addresses the location on the Kahiltna Glacier.

The cameras are located outside of designated wilderness at ~6,200-feet (1,890 m) on the Kahiltna Glacier, proximate to the Kahiltna Ice fall. Working in conjunction with the FAA, park staff would seasonally place the 2-camera devices on the flank of the southernmost spur of the West Ridge of Mount Hunter (see coordinates below) to provide near real time weather information for pilots and NPS staff to make accurate go/no-go decisions for aviation operations. This information would also be made available, via the FAA website, to the public. The size of the temporary weather camera/station is about 3 square meters (32.3 square feet).

Locations: Kahiltna: 62° 55.91' N, 151° 12.84' W
NHPA Assessment of Effect: No Potential to Cause Effect.

2. Backcountry Use Monitoring with Trail Counters and Cameras (2022-2026)

Description: Denali's 2006 Backcountry Management Plan (BCMP) outlines indicators and standards to assess important Resource and Social Conditions related to wilderness character and the visitor experience. Monitoring in the 2022-2026 seasons will build on previous monitoring efforts and include ongoing field observations of informal trails and campsites, backcountry impacts (litter, encounters with modern equipment, aircraft noise dose, and water quality), as well as encounters with other groups while hiking and camping. These observations are made by backcountry rangers and other NPS staff using human powered non-intrusive techniques. Monitoring may also include the seasonal installation of infrared trail counters at 10-20 rotating sites on formal and informal trails in the frontcountry and backcountry, including in Wilderness areas. Year-round installations would be maintained at Horseshoe Lake and the east side of the Savage Alpine Trail, near Mountain Vista. Counters will be camouflaged and hidden from view as much as possible.

Locations: Throughout the park
NHPA Assessment of Effect: No Adverse Effect.

3. 2025 Denali National Park and Preserve Superintendent's Compendium

Description: This project addresses the 2025 Denali National Park and Preserve Superintendent's Compendium. The Superintendent's Compendium is the summary of park specific rules implemented under the discretionary authority of the park Superintendent. The park compendium is updated annually and is a written compilation that addresses designations, closures, permit requirements, and other

restrictions and/or specifications imposed under the discretionary authority of the superintendent. The Superintendent's Compendium is prepared in accordance with the delegated authority contained within the regulations in Title 36, Code of Federal Regulations, Chapter I, Parts 1 through 7, as authorized by Title 54, United States Code, Section 100101 and 100751, and establishes regulatory provisions for Denali National Park and Preserve. Parts 1 through 6 are general regulations applicable to all areas of the National Park System, and Part 13 contains special regulations specific to individual parks in Alaska. Proposed changes are subject to a 30-day public comment period.

Location: Throughout the Park.
NHPA Assessment of Effect: To be determined.

4. Maintenance of Telecommunication Facilities in DENA Wilderness

Description: This project proposes to replace mission critical radio components in Denali National Park and Preserve, correcting deficiencies in existing radio/base/repeater sites. Components that would be replaced and upgraded include cabling, towers, repeaters, duplexers, amplifiers, repeaters, and electrical components. The structures that house the components would also be evaluated and replaced as needed.

In 2025, failing radio repeater components would be replaced at the Cantwell, Tokosha, and West Fork of the Yentna River Sites. The repeater shelter and miscellaneous components inside the shelter would be replaced at the Thorofare site. Additionally, the radio frequencies at the Mt. Healy, East Branch, Eielson VC (base station), Double Mountain, Wickersham, Thorofare, and ARCC sites would be re-programmed to comply with NTIA and FCC requirements.

Location: Existing radio repeater sites throughout the park.
NHPA Assessment of Effect: No Adverse Effect.

5. Removal of Non-Historic Materials and Downed Aircraft from Glaciated Environments in Denali National Park and Preserve (2020-2029)

Description: This project would allow the removal of non-historic materials, including downed aircraft, from glaciated areas of Denali National Park and Preserve for up to ten years (2020-2029). Actions taken under this authorization would be reviewed annually during the ten-year period. Such removal efforts may require a variety of actions, including but not limited to overnight stays by removal personnel, use of fixed wing aircraft, use of helicopters for sling loads, and helicopter landings.

Locations: Glacial environments throughout the Park
NHPA Assessment of Effect: No Adverse Effect.

6. Kennels Animal Care Improvements

Description: This project includes installation of poles for yard shading, installation of historic-style lighting, and building and testing new doghouse design prototypes. All project components will improve the health, safety, and welfare of the Denali sled dogs and kennels staff.

Locations: Denali National Park Kennels
NHPA Assessment of Effect: To Be Determined.

7. Kennels UTV, ATV, and Non-motorized Cart Use for Training

Description: This project is a proposed expansion of the use of non-motorized wheeled carts, motorized Utility Task Vehicles (UTV), and All-Terrain Vehicles (ATV) at designated areas inside the park for training the park sled dogs on established frontcountry trails and roads. This expansion would provide opportunities for training and exercise for the dogs when environmental conditions are not adequate for the use of sleds. Use would occur no earlier than the conclusion of dog demonstration programs and shuttle/transit services (mid-Sept) and in the instances of a winter with no snow, the activity would occur no later than April 15.

Locations: Trails and roads in the park entrance area including Riley Creek Campground, Denali Visitor Center campus, Denali Bus Depot, Roadside Bike Trail, INR Airstrip perimeter.
NHPA Assessment of Effect: No Potential to Cause Effects.

External Affairs

8. Issuance of Commercial Use Authorizations (2024-2028)

Description: Concessions Management Specialists will conduct an initial review of permit applications to determine whether the proposed action is allowable under NPS policy, and consistent with the park planning documents and the Commercial Service Strategy. This project proposes to cover: the issuance of new CUAs which cause no more than minimal impact to park resources and values; extension, renewal, reissuance or minor modifications of previously approved CUAs not entailing new construction; changes or amendments to approved actions or plans involving CUAs; renewal of CUAs not involving new environmental impact; other activities approved on a case-by-case basis and documented in CUA stipulations (fuel, storage, temporary shelters, transportation, navigation aids, etc.).

Authorized CUAs will:

- Be consistent with the purpose and significance of Denali National Park and Preserve
- Adhere to federal, state, and local laws and regulations and all National Park Service policies.
- Maintain public health, safety, and well-being through:
    - Carrying appropriate insurance meeting all federal, state, and local health and safety codes and regulations
    - Providing relevant safety instructions to visitors
    - Where applicable, be provided by certified individuals and businesses.
- Avoid unacceptable impact to park resources and values and is consistent with management plans, given existing use in the area.
- Provide enjoyment appropriate to the park while not unduly conflicting with park programs or activities, traditional or subsistence activities, or existing NPS commercial services.
- Not exclude the general public from participating in limited recreational opportunities

2025 Updates to Summer Guided Hiking CUA (May 11th – Sept 30th):

- Group size increase from 12 to 20 for CUA-authorized, non-wilderness trails. Addition of Nenana River Trail to list of trails authorized for guided hiking.

Locations: Park wide
NHPA Assessment of Effect: No Adverse Effect.

9. Eldorado Mining Special Use Permits (2019-2026)

Description: This serves as programmatic compliance for Special Use Permits issued per the 2016 Eldorado Creek Mining Plan of Operations Environmental Assessment. Special Use Permits and conditions will be reviewed and uploaded annually.

Kristopher E. DeVault, an agent for Eldorado Creek LLC, submitted a plan on May 22, 2015 to use a 6-inch suction dredge in 2015 on the 118 acres of valid unpatented placer mine claims Liberty #9 and Liberty #13 through #20 on Eldorado Creek. An 8-inch dredge could be used in future years. Housing for this operation would be at the Comstock Cabin. Access will be by the Denali National Park Road 90 miles back to Kantishna. The Liberty Claims are located 1 mile south of Kantishna. Beginning 1.25 miles upstream from its confluence with Moose Creek and continuing up Eldorado for 2.25 miles. The existing road crosses the lower part of Moose Creek to reach the Eldorado / Slate Creek access road. The Eldorado / Slate Creek access road crosses Eldorado Creek more than 20 times from its confluence with Moose Creek and runs through all the Liberty Claims. Eldorado / Slate Creek access road has been in existence prior to the claims being withdrawn from mineral entry. Access will also be from the Kantishna airstrip which is located 1.25 miles SW from Kantishna and the confluence of Moose Creek and Eldorado. An average of 15 park passes are requested for mining operations per season. At this time a minimum of 10 and maximum of 20 trips are anticipated depending on weather, resupply trips, emergencies, initial mining operation start up, beginning of year and end of year trips. Annual road maintenance will be needed to keep the road in usable condition and will be the responsibility of the mining operator.

Locations: Kantishna
NHPA Assessment of Effect: No Historic Properties Affected.

10. Access to Rainy Creek (ANILCA inholding) Special Use Permit (SUP) for construction of Guest Facilities (2025-2026)

Description: Denali National Park and Preserve is preparing to issue a two-year special use permit (SUP) for the activities requested by Hank Swan on behalf of the Kantishna Hills LLC owners who are constructing 5-10 cabins, an employee dorm, and other structures as part of a lodge facility on their three private parcels (13 acres total) on Rainy Creek. The applicants have requested use of national park lands to stage equipment and construction materials, permission to use a helicopter to sling-load construction materials from two of the requested staging areas on NPS land to their property, brushing of roads and staging areas, and use of a snowmachine and groomer to create a fixed-wing aircraft winter landing strip

on NPS land near their property and a snow machine trail stretching between Glen airstrip and Rainy Creek inholding property.

Locations: Kantishna
NHPA Assessment of Effect: No Potential to Cause Effect.

11. Special Use Permits: Special Events, First Amendment Activities, Commercial Filming, and Still Photography (2024-2028)

Description: The NPS proposes to issue Special Use Permits (SUP) for special park uses and events occurring within Denali National Park and Preserve.

Activities that would be permitted include:

- charity sporting events (road runs or bicycle events),
- weddings/ceremonies
- military training exercises
- first amendment activities (non-facility)
- commercial filming
- still photography
- other special events as approved by the Superintendent

This project would only cover activities that have No Potential to Cause Effect.

Locations: Throughout the Park
NHPA Assessment of Effect: No Potential to Cause Effect.

12. Military Crash Site Reconnaissance, Helicopter Use, Eldridge Glacier

Description: The NPS proposes to issue a special use permit to the Pacific Forces Regional Support Center at Joint Base Elmendorf-Richardson for annual helicopter (UH-60 Blackhawk) searches and landings on the Eldridge Glacier between May and October annually beginning in 2023 through 2027. The purpose of the activity is to conduct a reconnaissance to search for human remains or crash debris in the vicinity of 1952 crash site of USAF C-119 Boxcar. The crash site is located in eligible wilderness. If evidence is discovered in aerial reconnaissance, the US Air Force would like same-day permission to land and conduct a ground search with aircraft crew (up to 20 personnel). No installations or weather stations are being requested with this permit application. Expected time in the park to be two hours of overhead flight/loiter time to include touch and go with no intent to land and debark without cause.

Locations: Eldridge Glacier
NHPA Assessment of Effect: No Adverse Effect; Separate NHPA consultation was sent in June 2022.

13. Greg LaHaie/Kantishna Air Taxi Land Use SUP 2025-2026

Description: The NPS proposes to renew the existing special use permit for Greg LaHaie (President/Owner of Kantishna Air Taxi, Inc. and Skyline Lodge; Kantishna inholder) to continue use of

NPS lands in Kantishna. The NPS proposes to issue a two-year special use permit (through December 2026) to allow the uses at Kantishna as requested. When the Park Road is repaired and road access to Kantishna is possible, the use will be reviewed. The specific requests are to park his personal vehicle year-round adjacent to the airstrip and to use an airplane tie-down area for storage of his airplane, small shed building and a fuel supply. The fuel supply (Avgas) stored at the airstrip location is in a 2,000-gallon double-wall fuel tank, currently appropriately vented with overfill protection and hoses are disconnected.

Locations: Kantishna airstrip
NHPA Assessment of Effect: No Adverse Effect.

14. Non-competitive Award of a Concession Contract for Guided Interpretive Hiking Services (2025-2034)

Description: Denali National Park and Preserve intends to non-competitively award one (1) concession contract under the authority of Section 1307 of the Alaska National Interest Land Conservation Act (ANILCA), 16 U.S.C. § 3197, and 36 C.F.R. §§ 13.305-310 to Denali National Park Wilderness Centers, Ltd. (dba Camp Denali). This allows Camp Denali to provide the following visitor services: Guided interpretive hiking services in the Kantishna area new park additions, not to exceed 14 guided interpretive hikes per week, guided interpretive trips, including an average of four vehicle trips per day, not to exceed 28 trips per week into the Old Park (i.e. former Mount McKinley National Park), gold panning outings in the Kantishna area new park additions, not to exceed 3 gold panning outings per week, guided and unguided canoeing on Wonder Lake, including the storage of five canoes on Wonder Lake and transportation over the road between the north boundary of the Old Park and Wonder Lake, including Wonder Lake Campground, for an average of 10 trips per day not to exceed 70 trips per week. Guided interpretive hiking/trips may include the following incidental activities: naturalist walks, photographic outings, bird watching, and/or gold panning with hands and pans only. No overnight guided hiking is authorized under the draft contract. The contract will be awarded for a ten-year length of term for January 01, 2025, through December 31, 2034.

Locations: Kantishna
NHPA Assessment of Effect: No Potential to Cause Effects.

15. Yentna River Airstrips brushing: Special Use Permit (2025-2029)

Description: Denali National Park and Preserve intends to issue a five-year special use permit (SUP) to a CUA holder who operates a hunting guide service in the Yentna River areas of Denali National Preserve. The SUP allows maintenance of the airstrips with a gas-powered equipment to maintain clear landing areas up to 75 feet in width and 800 feet in length.

Locations: Middle - East Fork Yentna River: N 62°26.714', W 151°55.710'; Upper - West Fork Yentna River: N 62°30.532', W 152°26.653'.
NHPA Assessment of Effect: No Potential to Cause Effects.

16. Access to Mountain House LLC (ANILCA Inholding): Special Use Permit (2025-2026)

Description: Denali National Park and Preserve intends to renew a two-year special use permit (SUP) to the Mountain House LLC (Robert and Marne Sheldon) for access to the 4.99-acre private parcel, located on the Ruth Glacier. Specific SUP activities include: Creation and use of two storage areas (15'x15' each); one adjacent to the Main (east) Ruth Glacier East Landing Strip ("Landing Zone Cargo Site") and another near the base of the private property ("South Nunatak Cargo Site"). Helicopter sling load operations approved to transport cargo from the either site year-round, up to three days each week, and up to ten round trips on each of those days. Daily timing of the helicopter activity is limited to 9a-9p.

Locations: Ruth Glacier
NHPA Assessment of Effect: No Potential to Cause Effect.

Facilities

17. Routine maintenance of historic / cultural sites, structures, objects, utilities, and grounds

Description: This project includes routine maintenance and repairs to historic and cultural structures, sites, utilities & grounds. Activities must be reviewed by the NHPA specialist before implementing. Activities must meet all conditions for streamline review as identified in a Programmatic Agreement (PA) with the SHPO. Activities included in these PAs that have an "adverse effect" are excluded from this compliance. Activities that involve excavation / digging may require a cultural resource monitor. Building penetrations or changes to exterior lighting, colors, or materials may not be eligible for streamline review, in which case additional consultation would be required. Maintenance activities may occur in wilderness areas.

Location: Throughout the Park
NHPA Assessment of Effect: "No Adverse Effect", "No Historic Properties Affected", or "No Potential to cause effects".

18. Routine maintenance of non-historic structures, utilities, and grounds

Description: This project includes routine maintenance and repairs to existing non-historic structures, utilities, and grounds. Activities must be reviewed by the NHPA Specialist before implementing. Non-historic structures, utilities, or grounds that are located in, near, or whose area of potential effect (APE) extends into Historic Properties may be excluded from this project if the work could potentially affect those historic properties. Activities that involve excavation / digging may be excluded from this project or may require a monitor, if they could potentially disturb historic or cultural artifacts. Maintenance activities may occur in wilderness areas.

Location: Throughout the Park
NHPA Assessment of Effect: "No Adverse Effect", "No Historic Properties Affected", or "No Potential to cause effects".

19. Kantishna Airstrip Routine Maintenance and Minor Upgrades (2024-2028)

Description: This project covers routine maintenance and minor upgrades on the Kantishna Airstrip, located at the western terminus of the Denali Park Road. Possible routine maintenance activities covered by the 2008 Nationwide Section 106 Programmatic Agreement include vegetation management, in-kind regrading, or resurfacing; new construction or other major modifications to the airstrip are not included.

Locations: Kantishna Airstrip
NHPA Assessment of Effect: No Adverse Effect.

20. Application of CaCl to Mitigate Dust on the Denali Park Road (2023-2027)

Description: The objectives of the proposed action are to mitigate dust on the Park Road to improve concessions operations and visitor experience, as well as to reduce the quantities of gravel needed to maintain the road. This project will apply a binding agent (calcium chloride) to the unpaved portion of the park road to reduce blowing dust and fine gravel loss. Dust on the road detracts from the visitor experience and is considered to be a respiratory irritant. Dust also reduces the visibility on the park road, creating a safety hazard and decreasing the wildlife viewing opportunities.

Location: Along the unpaved portion of the Park Road (Mile 15 to 43 in 2025)
NHPA Assessment of Effect: No Adverse Effect.

21. Denali Park Road Routine Maintenance and Repair (2023-2032)

Description: This project includes the routine maintenance, repair, and operating activities of the Denali Park Road. The purpose of these maintenance activities is to preserve the unique character of the Park Road Historic District, improve the visitor experience for bus passengers, and minimize disruptions to park operations. Without cyclic maintenance, the condition of the road would deteriorate and likely require major road reconstruction.

Activities must be eligible for NHPA streamline review to be included in this project (see 2020 Mount McKinley National Park Road PA and 2008 Nationwide PA) and activities will be reported to the SHPO on an annual basis by the NHPA compliance specialist. Activities that adversely affect the park road historic district, cultural landscape, or any other historic properties, such as permanent alterations to the appearance of the road (ex: road widening, bridge construction or removal) or new installations that are plainly visible to road users (ex: slope stabilization structures, new or larger culverts / drains, permanent signs), may be included but should be reviewed by the NHPA compliance specialist before undertaking. Activities that would affect wetlands or floodplains (ex: installation of new drainage structures that redirect streamflow) may require additional compliance or permits and should be reviewed by the NEPA compliance specialist before undertaking. Activities that would occur outside of the existing road prism, or in wilderness, are excluded.

Locations: Along the entire Park Road.
NHPA Assessment of Effect: No Adverse Effect.

22. Mitigate flood damage potential on Park Road (2025-2029)

Description: In recent years, small to medium flood events during summer months have deposited an excess amount of material around the intake and discharge areas of several culverts along the Denali Park Road (in particular, between miles 9-12). Rocks and debris that have been carried down the creek during high water events and have partially filled the culverts, significantly reducing the flow through the culverts, and forcing water over the stream banks and onto the road. This project will enhance driver and visitor safety and mitigate potential road damage from flooding by periodically repairing the stream banks and removing material from the stream beds. Material will be removed from the drainages, and stream banks will be repaired, only within 150 feet of the center line of road (outside Wilderness). Material will be removed to expose the bottom of the culvert and to match the natural stream grade, upstream and downstream of the culvert (yielding approximately 2,000 cubic yards of material total). Material will be removed annually, or more frequently if needed. Removed material will be hauled to existing storage locations in the park for use in future road and trail maintenance.

Locations: Park Road
NHPA Assessment of Effect: No Adverse Effect.

23. Trails Maintenance Plan (2024-2028)

Description: This project covers the routine maintenance, repair, and operating standards for existing trail systems located within Denali National Park and Preserve as described in the associated “Trails Maintenance Plan”. Work may include brushing, the removal of downed vegetation, replacement of existing signs, “in kind” repairs to existing trail structures, re-grading, resurfacing, trail stabilization, and / or trail rehabilitation. Work may include trails in wilderness and historic trails. Activities must be reviewed by the NHPA Specialist and must meet all conditions for streamline review as identified in an approved Programmatic Agreement (PA). Activities that involve ground disturbance may require a cultural resource monitor. New trail construction, major trail reroutes, installation of new major trail features, or trail alterations that would change its character or class are not included in this project and would require additional consultation.

Locations: Throughout the Park
NHPA Assessment of Effect: "No Adverse Effect", "No Historic Properties Affected", or "No Potential to Cause Effects".

24. Reduce Roadside Vegetation to Increase Safety and Visibility (2022-2026)

Description: This project includes the removal of anthropogenic brush along the Park Road to improve road structure, eliminate a barrier to wildlife crossing, and enhance visibility and safety for drivers and visitors. Anthropogenic brush is vegetation that has taken advantage of the extra moisture and the microclimate provided by the existence of the road. It is taller and/or of a different species and is more robust than the naturally occurring vegetation. This project will be limited to the vegetation that grows

within 5 meters of either side of the road, on the back slopes and fill slopes, that is outside Denali's normal brushing maintenance. Brush will either be hand cut using chain saws and a chipper and left on site, or plucked by an excavator and hauled to a burn pile for disposal.

Locations: Along the Park Road.
NHPA Assessment of Effect: No Adverse Effect.

25.Nenana River Trails Construction (2023-2027)

Description: Construction of approximately 17 miles of trail along the Nenana River between Mile 231 and Mile 237 of the Parks Hwy is expected to take about 5 years and began in 2023. Of this total, approximately eight miles will be a multiuse trail open to both pedestrians and bicyclists. This trail will be approximately eight feet wide and will primarily have a crushed gravel surface.

Locations: Mile 231 Wayside to Nenana River
NHPA Assessment of Effect: No Adverse Effect.

26. Wooden Shelter (Quinzee Huts) Winter and Summer Locations (2024 - 2028)

Description: This project proposes to continue to temporarily place quinzee huts along the park road on a seasonal basis. NPS crews and equipment would transport and place the huts along the Park Road in the Fall for use by the winter concessioner and place the huts out of sight of the Park Road in the Spring for storage or administrative use during the summer. Placement and storage of quinzee huts must remain outside of Wilderness, must not be visible from the Park Road during summer visitor operations, and must be considered relative to the Park Road Historic District. Huts may not be permanently placed along the Park Road. No new ground disturbance is approved, and any necessary ground disturbance associated with hut placement requires review and possible monitoring by cultural and natural compliance staff.

Locations: Along the Park Road
NHPA Assessment of Effect: No Adverse Effect.

27. Polychrome Area Improvements - Construct a bridge over Pretty Rocks Landslide and other engineered solutions along miles 44-46 of the Denali Park Road

Description: Separate NHPA consultation was sent in December 2021 and the Environmental Assessment was completed in March 2022. In 2023, Denali National Park and Preserve began improvements to the Park Road in the Polychrome Area to address several geologic hazards that are jeopardizing public safety and infrastructure. The park is continuing Phase I construction of an approximately 400-foot steel bridge over the Pretty Rocks landslide (Mile 45.4) and planning and design for Phase II construction of a road realignment above the Bear Cave Landslide (Mile 44.8).

Locations: Mile 44-46 of the Denali Park Road
NHPA Assessment of Effect: Adverse Effect.

28.C- Camp Shower House Replacement

Description: The shower house facility for C-Camp was originally built in 1975-1978, with an expansion in the mid-1990s, and rehabilitation improvement projects in 2004 and 2006. The existing shower house facility has exceeded its service life. A new year-round shower house is designed and planned for construction to begin in 2025 in the north end of the C-Camp area and would include a laundry room (10w/d) and sink areas for filling portable water containers for disposal of graywater when the water system is shut off to C-Camp cabins. Following the completed construction of the new shower house, the existing shower house will be demolished and removed.

Location: The proposed location is a previously disturbed area southeast of the Shaffer Building, on the north side of C-Camp.
NHPA Assessment of Effect: No Adverse Effect.

29.Construction of a Wildland Fire Management Housing Facility in the C-Camp Area

Description: NPS proposes to construct a an eight-bedroom dormitory facility (single occupancy) to support the park's Fire and Fuels Management Program. The 3,340 square foot facility would be standard wood frame construction, built to meet the sub-arctic weather conditions of Alaska, using energy efficient windows, lighting, appliances, and high R-value insulation. The dorm would have a communal living area, dining/kitchen area, shared bathrooms, showers, and a laundry room. It would be connected to the existing water, sewer and electrical systems at C-Camp and designed for year-round use. The structures would be constructed in accordance with all local and national building codes. Final design, contracting, and construction to start in 2025.

Location: C-Camp, the proposed location is a previously disturbed area north of the current resident parking areas.
NHPA Assessment of Effect: No Adverse Effect.

30.Upgrade MSLC Septic System

The existing septic system located on the Murie Science and Learning Center (MSLC) campus in Denali's frontcountry currently provides wastewater treatment and disposal for four facilities during the winter and shoulder seasons when the Frontcountry Wastewater Treatment plant is not in operation (roughly September through May): the JV Bus Barn (B530), the Erratics Bath House (B.526), the Employee Dining Room (B.546), and the Murie Science and Learning Center (B.547). The existing system consists of three independent septic tanks piped to a single conventional soil absorption system (drainfield) that was installed in 2009. The existing septic tanks and drainfield do not have spare capacity. This project will expand and replace components of the existing MSLC campus septic system to accommodate a new, year-round, 12-bedroom, concessioner employee housing facility currently under construction adjacent to the MSLC campus.

Location: Frontcountry developed area
NHPA Assessment of Effect: To Be Determined.

31. Geotechnical Investigation in Denali's Frontcountry Developed Area (2024-2028)

Description: Several upcoming infrastructure projects will require geotechnical data to inform their design. This includes drilling boreholes (up to 8 inches diameter and 120 ft deep) or excavating test pits (approximately 5' x 8' x 15' deep) and the collection of soil samples. Some boreholes will include instrumentation and 12-inch diameter steel casing visible at the surface. Others will be backfilled immediately. Off-road locations will use a tracked drill rig to minimize ground disturbance along the access route. The Cultural Resource Management Team would determine on a case-by-case basis if a cultural resource survey or archeological monitor is needed.

In 2025, this project would include boreholes on the north and south side of the Nenana River, within the Alaska DOT&PF right-of-way, to inform the design of a proposed pedestrian bridge near Milepost 231. It may also include boreholes in the Headquarters Permanent Housing area, outside the historic district, to inform the design of additional housing units. It may also include test pits near Mile 81.5 of the Park Road Historic District to determine the area's potential as a future aggregate source.

Location: Frontcountry Developed Area
NHPA Assessment of Effect: No Adverse Effect.

32. Replace Roof at the Eielson Visitor Center

Description: Since it was constructed in 2008, water has infiltrated the building through the roof during spring melt and the source of the leaks have not been able to be located, nor effectively corrected. NPS has concluded that the intricate shape and design of the roof as a walking area and viewing platform with numerous penetrations is to blame, and the roof needs to be redesigned and replaced. The new roof would no longer be open as a viewing platform and would be vegetated. The PV array would be ground-mounted to maximize energy production (location TBD). Construction would not occur until Summer 2027, when road access is restored, but final design, compliance, and contract solicitation will be completed in 2025 and 2026.

Location: Mile 66 of the Park Road
NHPA Assessment of Effect: To Be Determined.

33. Implement Hazard Tree Management Plan

Description: The park intends to finalize a plan outlining the process and personnel engaged in hazard tree identification, risk assessment and removal prioritization, removal techniques, and documentation.

Location: Frontcountry developed areas along the Park Road
NHPA Assessment of Effect: To Be Determined

34. Stabilize Underground Basement of Alaska Road Commission Building on McKinley Airstrip

Description: During summer 2024, the park discovered an underground cavity (approx. 15'x 15'x 10') on the edge of the McKinley airstrip when NPS mowing equipment inadvertently broke through a portion of the ceiling. Cultural resource specialists investigated and determined that it was the basement or underground storage room of a former Alaska Road Commission (ARC) building. Due to safety concerns and the need to stabilize the area, DENA is planning to use an excavator to fully expose the basement, remove the wooden cribbing, and fill the cavity with compacted material. Because the work may impact undisturbed soils, an archeological monitor will be required during project implementation.

Location: McKinley Air Strip (INR)
NHPA Assessment of Effect: No adverse Effect.

Resources

35. Cultural Resource Inventories (FY23-27)

Description: This project will encompass all activities that help fulfill the Park's legal responsibilities under Section 110 of the National Historic Preservation Act (54 U.S.C. 306102) to identify, evaluate, and protect historic Properties. Section 110 inventory activities include survey, evaluation, testing, and protection of cultural resources (archeology sites, historic structures, cultural landscape, museum objects, and ethnographic resources).

Survey: Whenever possible survey areas will be accessed on foot or by non-motorized watercraft. Remote locations (greater than 8 miles for roads) may be accessed via fixed wing or rotor aircraft. The number of helicopter landings will vary per year based on 110 survey area needs. As of 2022 less than 2% of the park has been surveyed for cultural resources.

Subsurface Testing: Subsurface testing will be limited to what is needed to establish deposition context at sites. Shovel tests will by 30x30cm in diameter. Test Units (1x1m) may be excavated on a very limited basis with Park Archeologist approval. When conducting condition assessments of sites additional shovel tests may be excavated to help determine site significance and eligibility for the National Register of Historic Places.

Collections: In general, surface collections will not be made unless the artifacts are of distinct material or form or are in danger of being looted, destroyed, or removed. All items found in subsurface contexts will be collected. All collections will be cataloged and accessioned into the DENA collections by DENA staff.

Locations: Throughout the Park
NHPA Assessment of Effect: No Potential to Cause Effect.

36. Fuels Reduction and Fire Mitigation (2023–2027)

Description: The proposed fuels reduction plan and subsequent maintenance includes treatments units within the Wildland Urban Interface (WUI) communities and road corridor areas of the park, also known as critical and full protection options and designated sites (i.e., other areas that meet comparable selection criteria) as referenced and defined in the DENA FMP (2004 and 2021 draft date) and Alaska Interagency Wildland Fire Management Plan (2021 AIWFMP). Fuels reduction work will follow guidelines listed in the compliance documents and when along roadways, will occur within an appropriately determined buffer to maintain fuel breaks, capable of reducing fire behavior and providing viable evacuation routes for wildfire emergencies. Work will be completed in phases (also known as progressive treatment) to allow for stand hardening and resilience against windfall. Treatment using chainsaws, small power tools and hand tools to reduce fuel loading build-up by thinning of dense vegetation, piling, and burning of dense vegetation (in pile form approx. 6x6 in size). Once vegetation is felled and piled, it will be allowed to dry and cure so that it burns cleanly and efficiently under specific prescription parameters.

Pile locations will be recorded by unit so that they are burned at the appropriate time. Fuels treatment units will require re-treatment at intervals determined by fire management staff and per fire ecologist & monitoring prescription data. They may also require pre- and post-monitoring. This rotation and treatment prescription is vetted and supported by years of fire ecology & monitoring data.

2025 Treatment Units:

Firewise Units (High priority) = JV 01, JV 02, EA 03, EA 04 (MSLC, Dining Hall, and Bus Depot/Wilderness Center areas)
Front Country Units (High Priority) = Mechanical Units 17, 11, 12, and 1 (Westside of Park Road Mile 0-0.5, C-Camp and Headquarters area)
Pile Burning Units = All Units above plus Firewise Units EA 02a (Mercantile area), EA 07 (Wastewater treatment area), and INR Airstrip.

Location: Throughout the park.
NHPA Assessment of Effect: No Adverse Effect.

37. Monitoring Passerine bird populations in Denali National Park and Preserve, Alaska by the Central Alaska Network Vital Sign Monitoring Program (2022-2026)

Description: Our primary objective is to detect changes in a series of metrics associated with distribution, presence, relative abundance, and peak detection times of a suite of passerine birds over time. The following metrics will be measured annually: 1) first, peak, and last annual detection dates, 2) peak detection times within daily and annual sampling periods, 3) relative abundance, and 4) occupancy (presence), and 5) community structure. This work has occurred annually in Denali since 1992.

Location: Along the Denali Park Road and within 6km of the Park Road.
NHPA Assessment of Effect: No Historic Properties Affected.

38. Plate Boundary Observatory (PBO) stations - Denali, monitor tectonic and magmatic process using high precision (GPS) (2022-2026)

Description: EarthScope is a program of the National Science Foundation (NSF) that deploys thousands of seismic, GPS, and other geophysical instruments to study the structure and evolution of the North American continent and the processes the cause earthquakes and volcanic eruptions. It involves collaboration between scientists, educators, policy makers, and the public to learn about and utilize exciting scientific discoveries as they are being made. The Plate Boundary Observatory (PBO) is the geodetic component of the EarthScope project, designed to study the 3D strain field across the active boundary zone between the Pacific and North American tectonic plates in the western United States. Data from PBO's integrated network of GPS stations, strainmeters and seismometers, coupled with aerial and satellite imagery, are providing important temporal constraints on plate boundary deformation and are improving our knowledge of the fundamental physics that govern deformation, faulting, and fluid transport in earth's lithosphere.

Location: WIKR Wickersham Dome (63.55273, -150.92221; co-located with seismic and radio repeater equipment); AC33 North Denali, Tokosha (63.67113, -150.68460; co-located with radio repeater equipment)
NHPA Assessment of Effect: No Historic Properties Affected.

39. Long-Term Acoustic Monitoring: Denali Triple Lakes (2022-2026)

Description: NPS acoustic inventories have been conducted in many park units, but only a few parks (including Denali) have explored the implications of detecting change by using a series of monitoring records through time. One of the longest-running studies in the NPS is the Denali Triple Lakes trail site, sampled: {2009, 2016, 2017, 2018, 2019, 2020, 2021}. We propose continued measurements for the next five years, every year: {2022, 2023, 2024, 2025, 2026} at this location.

Locations: Between the second and third lake of Triple Lakes, near the Triple Lakes Trail.
NHPA Assessment of Effect: No Potential to Cause Effect.

40. Programmatic Compliance Stream Assessments (2022-2026)

Description: This project seeks 5-year approval for stream assessment activities conducted throughout Denali National Park and Preserve that are routine in nature and do not involve ground disturbance; including non-destructive data collection, inventory, study, research, and monitoring activities, 2022-2026. These activities must be covered under the 2008 Programmatic Agreement between the NPS and the SHPO or be activities which do not have the potential to cause effect to historic properties. Project leads must consult with the Section 106 Coordinator on a project-by-project basis.

The following activities are covered. Activities not listed, but similar in scope and scale, may be covered via specific approval with the compliance team and park management. Activities located in culturally significant areas to tribes are not covered under this approval without additional tribal consultation.

- Physical habitat surveys
- Stream morphology surveys
- Pebble counts
- Floodplain assessments
- Flow measurements
- Macroinvertebrate sampling with dip nets, kick-netting, bottle trapping, and other methods
- Collecting water samples for eDNA (environmental DNA) and water chemistry testing

The following Installations when no ground disturbance occurs:

- Installation of temperature and environmental conditions logging devices
- Temporary installation of survey benchmarks (consult with 106 coordinator)
- Temporary installation of trail cameras for monitoring purposes (consult with 106 coordinator)
- Temporary installation of hydrophones (underwater microphone)

L**ocation:** Throughout the park.
NHPA Assessment of Effect: No Adverse Effect.

41. Spring Abundance Surveys for Willow and Rock Ptarmigan (2024-2028)

Description: Both willow and rock ptarmigan can be hunted with liberal season dates and bag limits. Game Management Unit 13 (GMU; specifically, 13B and 13E) receives among the most hunting effort for ptarmigan than any other GMU in Alaska (Merizon and Carson 2013). Surveys would occur between 1 and 31 May for a total of 3 to 4 days. Within each day surveys will occur during two time periods. The first at sunrise and continuing for up to 2 hours after sunrise; the second, 2 hours prior to sunset and continuing to sunset. Each survey transect will be repeated twice during the peak of display activity.

Locations: Along the Park Road.
NHPA Assessment of Effect: No Historic Properties Affected.

42. Wolf and Coyote Monitoring in Denali NPP (2022-2026)

Description: Capturing and radio collaring wolves each year to maintain at least 2 radio collared wolves in each pack whose home range is at least partly within the designated wolf population monitoring zone. Wolves will be captured by means of immobilizing darts fired from a low-flying helicopter and equipped with radiocollar containing either conventional VHF transmitter beacons or satellite-linked GPS locators. Collared wolves will be located by aerial radiotracking from single-engine airplanes approximately twice monthly during March - September, and opportunistically during winter. Collared wolves are monitored most intensively during early summer (May - June) to locate dens and estimate pup production. In addition to the wolf monitoring project, we will capture and radiocollar up to 5 coyotes per year along the northeast boundary of Denali. This project has been going since the 1980s.

Location: Within Denali National Park and Preserve located primarily north of the Alaska Range including the Windy Creek watershed. Aircraft, motor vehicle, and/or foot travel from the Park Road. Entry into closed areas is not expected to be needed except on rare occasions, and approval will be obtained from the park's wildlife management coordinator before closed areas are entered.
NHPA Assessment of Effect: No Historic Properties Affected.

43. Continued implementation of a long-term inventory and monitoring program for the streams and rivers of Denali (2022-2026)

Description: Water sampling of rivers and streams in the Park; this work has been ongoing since 2008.

Locations: Throughout the park
NHPA Assessment of Effect: No Potential to Cause Effect.

44. Dynamics of the Denali Caribou Herd (2022-2026)

Description: The overall goals of this research during 2022-2026 are to continue monitoring long-term population trends, vital rates, and other population characteristics that determine the status of the Denali Caribou Herd, and to complete research on survival patterns and habitat selection of male caribou.

OBJECTIVES
1. Estimate the population size and composition in late September each year;
2. Determine productivity, survival patterns and age structure of adult females;
3. Assess calf production and recruitment;
4. Investigate the patterns of survival and habitat selection of male caribou;
5. Relate caribou population status, trends, and vital rates to climatic variables and predator population characteristics.

Summary of proposed field methods and activities:
Capture and Radiocollaring: Female caribou are captured by helicopter darting and radio collared to monitor survival, productivity and movements, and composition surveys and herd counts. In March, we instrument female calves to provide recruits for the age-structured sample and to monitor productivity of young age-classes. Females captured as 10-month-olds but not recruited into the age-structured sample have their collars removed at about 4 years of age. We use thiafentinal/xylazine hydrochloride for immobilizing. A Supercub working with the helicopter locates caribou for darting, monitors darted caribou during induction, and checks on caribou captured on previous days. Once a caribou is immobilized, it is fitted with a radiocollar and standard body measurements are taken. Once processing is completed, caribou were given naltrexone hydrochloride and yohimbine hydrochloride to antagonize the effects of immobilants.

Radiotelemetry: Radio collared caribou are relocated by radiotracking from fixed wing aircraft every 2 months. In addition, female caribou are located to assess natality (mid-May), and to aid in composition surveys and the annual census.

Pregnancy assessment: In mid-May, all radio collared cows ≥ 2-years-old are located by helicopter and observed to assess their pregnancy status based on a calf at heel, udder distension, or hard antler presence.

Composition surveys: We conduct 2 helicopter surveys to assess the age/sex structure of the herd annually (early June, late September). During these surveys, a search area based on the distribution of radio collared caribou immediately prior to the survey is intensively searched and all caribou encountered are approached at close range with a helicopter and classified by age and sex.

Population estimation: Annual herd size is determined from an estimate of the number of adult cows in the population based on post calving survey results. We intensively search each survey block by helicopter without the aid of radiotelemetry. Caribou groups encountered are counted and classified, and we determine the occurrence of marked individuals within groups via radiotelemetry. Simultaneously, a Supercub locates all radio collared females in or adjacent to the survey block. Periodically through the survey, we compare notes between the 2 aircraft crews to determine marked groups missed by the helicopter in areas already surveyed; those groups are then relocated by the helicopter and counted. In addition to adding these caribou to the totals counted, this information provides an assessment of sightability relative to group size during the survey. Because most cows and calves tend to be in large groups at this time of the year, sightability is generally very high and strongly related to group size.

Locations: Throughout the Park and Preserve
NHPA Assessment of Effect: No Potential to Cause Effect.

45. Vertebrate ichnology and paleoenvironments of the Upper Cretaceous Cantwell Formation, Denali National Park and Preserve: insights from North America's most prolific, high-latitude dinosaur track assemblage (2022-2026)

Description: The goal of this work is to better understand the taxonomic richness and paleoecology of dinosaurs and other vertebrates that are known from abundant trace fossil evidence preserved in the Cantwell Formation and is a continuation of previous dinosaur fossil research. During the field seasons (June 1-September 11) we intend to continue our work to better document known dinosaur track sites as well as locate new fossiliferous sites in the Cantwell Formation (CF).

Significant specimens will be photographed, and a subset will be imaged using photogrammetry. Silicone peels (Silputty) will be made for some tracks when size, weather and preservation are appropriate. In addition to possibly collecting tephra (volcanic ash) samples for radiometric dating (approximately 1 gallon of sediment, volumetrically), we also request the option to physically collect a small number of fossils when necessary. We will do this sparingly and will limit our collections to body fossils (bones/teeth) or particularly significant track specimens that will are at risk of being lost due to erosion. When possible, we will inform the park geologist or his representative before collecting. To date, our collections have been very minimal.

Locations: Big Creek drainage, Tattler Creek, Cabin Peak areas.
NHPA Assessment of Effect: No Potential to Cause Effect.

46. Monitor physical and biological components of permafrost on burned and un-burned sites near Gosling Lake, Denali National Park and Preserve (2024-2028)

Description: This sampling period (once every three years), the research project will utilize the platform of an unmanned aircraft system (UAS) with a swappable payload to carry a multi-spectral sensor and a radiometric thermal sensor. The UAS will be operated between 100 and 120 meters AGL, at speeds of 10-15 mph over both transect sites. There will be ~ 8 take-offs and landings per transect site (~50 acres each), and each flight segment lasting 10-12 minutes each, totaling ~ 2 to 2.5 hours of flight time for the entire research area. Other UAS operations related to natural and cultural resources best practices, digital security, etc. can be referenced through the Small Unmanned Aircraft Systems in NPS Operations Programmatic Approval 2024-2028.

Locations: Northwest area of the Park
NHPA Assessment of Effect: Potential to Cause Effect to Historic Properties.

47. Small-Mammal Monitoring at The Rock Creek Legacy Plots in Denali National Park and Preserve by CAKN (2025-2029)

Description: Small mammals or voles have been monitored using mark-recapture methods via live-trapping techniques in Denali National Park and Preserve (DENA) since 1992. The objective of this project is to continue in perpetuity the long-term monitoring of small-mammal population dynamics, including estimates of density and abundance, on the Rock Creek legacy plots in DENA. The monitoring involves mark-recapture sampling via live-trapping of three species of voles (Myodes rutilus, Microtus oeconomus, and Microtus miurus) on four long-term monitoring plots established in 1992 (21 years ago). Each plot is approximately 0.8 ha in area and is comprised of a 10m x 10m grid containing 100 Sherman live-traps placed 10m apart in a square configuration. We conduct small-mammal trapping for four nights in mid-August annually (usually around August 12). Our field procedures follow methodology described by Furtsch (1995) and Rexstad (1996, 2005) in which traps are: baited with irradiated sunflower seeds (microwaved to prevent germination of the sunflower seeds in DENA); padded with biodegradable cotton bedding (nestlets) and down for warmth; and are covered with plastic trap covers to keep animals dry. The 400 traps we deploy are checked three times daily (0600, 1300 and 2000). When we capture animals, they are identified by sex and species, and we determine their net weight and reproductive status. We implant unmarked individuals subcutaneously between the shoulder blades with passive integrated transponder (PIT) tags.

Locations: Alaska, Denali National Park and Preserve, Rock Creek Drainage
NHPA Assessment of Effect: No Potential to Cause Effect.

48. The Critical Connections Program: Studying the Full Lifecycle of Denali's Migratory Birds (2025-2028)

Description: Document year-round movements of migratory birds that nest in Denali and assess how conditions across their year-round range affect their ability to return to their northern breeding grounds and successfully produce young. Summary of proposed field methods and activities:

1. Capture and remove tracking devices from individuals captured in previous years.

2. Individuals will be captured by luring them into mist nets using audio play-back calls.

3. After removing the tracking device, individuals will be released.

4. Non-target individuals captured will be banded with USGS aluminum leg bands. A blood sample will be collected for contaminant analysis.

5. Some non-target individuals will also be banded with plastic color-coded leg bands to help identify them in future years and for future studies.

Locations: Includes the area within 4 km of the Denali Park Road
NHPA Assessment of Effect: No Potential to Cause Effect.

49. Continue snow surveys in Denali as part of the Central Alaska I&M Network, (2021-2025)

Description: To efficiently obtain, manage, and disseminate high quality information on snow, water, climate, and hydrologic conditions. Snowpack information provides additional understanding of a large number of natural resource processes within the park including wildlife research such as population density, birth survival rates, herd movements, vegetation succession, as well as hydrologic information regarding surface water supply.

This project started as part of Denali National Park and Preserve's Long Term Ecological Monitoring (LTEM) Program and has continued since 2002 as part of the Central Alaska Inventory and Monitoring Network (CAKN). The snow surveys involve two methods of data collection, one is a ground-based survey and the other is an aerial survey. These surveys are done as part of an interagency agreement with the USDA Natural Resources Conservation Service (NRCS).

The ground-based survey is done at an established snow course, where there are five permanent markers installed in the ground. There are four of these in/near the park at: park headquarters, Kantishna, Minchumina, and Purkeypile Mine. The latter three are near remote airstrips. Three times per winter (Feb. 1, Mar. 1, and Apr. 1) a field crew will visit the sites and take snow measurements, including snow depth, density, and snow water equivalent, using a cylindrical snow tube. Access to the site requires a fixed-wing aircraft with skis or wheel/skis and then a short ski or snowshoe to the site.

The aerial surveys require low level passes with a fixed-wing aircraft to read the snow depth at an established snow marker, which is a 10–12-foot pole with alternating red and black crossbars spaced one foot apart. There are six snow markers on the south side of the Alaska Range in Denali at Dunkle Hills, Tokositna Valley, Ramsdyke Creek, Dutch Hills, Nugget Bench, and Chelatna Lake. There are also aerial markers at Kantishna and Purkeypile for those times when conditions prevent the plane from landing at the airstrip (aufeis, wind, daylight, etc.). These surveys are also done three times per winter often at the same time as the ground surveys. The snow survey window is the last three days of the month through the first two of the next month, i.e., the February 1 survey window is January 29-Feb 2.

Locations: There are four existing snow courses on the north side of the Alaska Range and six aerial snow markers on the south side of the Alaska Range. These sites were established in the 1980s and 1990s and have been measured continuously for several decades.
NHPA Assessment of Effect: No Historic Properties Affected.

50. Continue weather and climate monitoring in Denali NP&P as part of the Central Alaska I&M Network (2021-2030)

Description: One of the fundamental ways the Central Alaska Network is helping to assess climate change is by operating remote climate stations that continuously record temperature, precipitation, wind speed and direction, soil temperature, relative humidity, snow depth, and solar radiation, throughout the park. These climate stations are providing critical quantitative data for current and future research and management decisions. The objective of the climate monitoring program is to monitor and record weather conditions at representative locations to identify long and short-term trends, provide reliable climate data to other researchers, and to participate in larger scale climate monitoring and modeling efforts beyond park boundaries.

Summary of proposed field methods and activities:

There are six climate stations in the park that were installed in 2004 and 2005 with long-term monitoring as the goal. An annual site visit to each station in the summer allows us to download the data, calibrate and swap out sensors, and troubleshoot any problems. Two sites are accessible along the park road (Toklat and Eielson Visitor Center), while the four additional sites are in more remote locations and require access by air (Stampede, Wigand, Ruth Glacier, and Dunkle Hills). Details related to the selection of the sites, the process for data collection, the station design, data processing, and data dissemination are documented in the Central Alaska Climate Monitoring Protocol and Standard Operating Procedures (Available at: https://irma.nps.gov/DataStore/Reference/Profile/2251883.)

Locations: The six network climate stations are located at Toklat, Eielson Visitor Center, Dunkle Hills (above the old mine site), Ruth Glacier (in the Tokosha Mountains above Ruth Glacier) Stampede Airstrip, and Wigand Creek (in the Toklat basin just north of the wilderness boundary near the confluence of the Toklat and East Fork of the Toklat). The locations of the sites the NPS maintain in cooperation with others are: Fire RAWS: McKinley River (near Hot Slough), Wonder Lake (at the WL Ranger Station), Denali Visitor Center RAWS near the park entrance., and Minchumina NRCS Snotel: Kantishna (just north of the Denali Backcountry Lodge) and Tokositna Valley (at the confluence of Ramsdyke Creek and the Tokositna River). NOAA CRN: Denali 27N located above the Wonder Lake campground on the service road near the water tower. NWS COOP site: McKinley Park at the kennels /park headquarters and at Eielson VC (co-located with CAKN station).Denali Mountain sites: At 7K and 14K camps on Denali.
NHPA Assessment of Effect: No Historic Properties Affected

51. Central Alaska I&M Network Permafrost Monitoring in Denali National Park and Preserve (2021-2031)

Description: The purpose of work is long-term monitoring of the thermal and physical state of permafrost within DENA while also building on previous research campaigns. The Network permafrost monitoring program has three main field sites: Toklat Basin: active layer thickness and soil surface elevation were measured at six transects in the Toklat Basin in 2013 (Reitman and Schirokauer, 2013). These transects (or a portion thereof) will be repeated as part of this program. Gosling Lake: permafrost degradation between burned and unburned areas near Gosling Lake has been studied through field campaigns in 2005 and 2019. This program will repeat active layer thickness measurements, elevation surveys, and download temperature dataloggers from the site. DENA Park Road: It is proposed that two long-term monitoring grids be established at Wonder Lake and Murie Flats to measure active layer thickness, soil surface elevation, and soil temperature. As part of the Network program, these sites will be remeasured every 3 years.

Locations: Six sites listed above
NHPA Assessment of Effect: No Adverse Effect.

52. Spruce Beetle Population Monitoring (2021-2025)

Description: A spruce beetle outbreak in Southcentral Alaska has moved swiftly through the forests of the region since its initial detection in 2016, impacting many aspects of life including infrastructure, safety, recreation, and tourism. Trapping within Denali National Park and Preserve would consist of one to three Lindgren funnel traps, which are a standard tool for bark beetle monitoring. Trap locations would be flagged for ease of collection. Traps would be installed around May 1 and preferably checked at 2-week intervals through early September, at which point all traps, flagging, or any other trap-related items would be removed.

Traps are baited with a spruce beetle lure and the collection cup at the bottom of the of the funnel set will either be filled with propylene glycol (wet trapping - preferred) or have a Vapor Tape II insecticide strip placed in it (dry trapping). If possible, the traps are placed approximately a tree length from the nearest host trees to avoid localized spillover attacks from beetles coming into the traps; these traps only draw in beetles in the general vicinity. All propylene glycol or pesticide strips used during the trapping will be removed from the field. Lures may or may not need replaced during the season (manufacturer-dependent). Collections will be stored in Ziplock bags in a freezer until they can be sorted and counted. Traps will be installed by AK Department of Forestry (AKDOF) staff and maintained by AKDOF or Federal cooperators.

Locations: Frontcountry within first 15 miles of Park Road, not visible from road. Specific locations to be determined after consultation with Denali National Park and Preserve staff.
NHPA Assessment of Effect: No Historic Properties Affected.

53. Assessing the Effects of Traffic (and No Traffic) on the Behavior and Viewability of Grizzly Bears (2023-2026)

Description: The current road closure west of the Pretty Rocks Landslide presents an opportunity to assess grizzly bears' response to traffic by deploying a before-after-impact (i.e., BACI) study to assess changes in bear movement and habitat use along a 45-mile segment of the Denali Park Road. The multi-year closure of the western half of the park road provides an opportunity to study the effects of high traffic volume on grizzly bears, using the same bears in the same area and thus controlling for major confounding effects. The non-traffic "control" period in 2023-24 will be compared to the impact or "treatment" period when high traffic levels resume in 2026-27.

Bears (24) were captured and fitted with radio-collars in 2023 and spring 2024. During the study duration (years 1-4), fixed-wing radio-tracking flights will occur monthly (April - Oct) and will co-occur with ongoing wolf tracking flights.

Summary of field methods and activities:

1. Grizzly bears will be captured by aerial methods and instrumented with satellite tracking collars. Biological samples will be collected at the time of capture (hair, skin plugs, blood). Biological measurements will also be made at the time of capture.
2. Scat and hair samples will be collected throughout the study using non-invasive and opportunistic methods.
3. Remote cameras could be deployed along the park road and adjacent trails.
4. Field observations of grizzly bear behavior will be conducted along the park road
5. Plant phenology and berry abundance index data collection along roadside bear habitat

Location: Capture activities occurred within 10 miles of the park road. Hair, scat, and photograph collection will occur within 100 feet of the park road.

Project Impacts:

- At the end of the study in September of 2026 the radio collars will automatically release from the bears and be retrieved by hiking into locations or by helicopter if too far to access from the park road.
- There may be hike in non-destructive plant phenology monitoring (vegetation plots) associated with bear plant food sources during all years of the study.
- Collard bears will be visible from the park road for four years 2023-26
- The untrammeled (capture), solitude (aviation noise) and undeveloped (installations) wilderness character will be degraded for the duration of the study. The natural quality of wilderness character will be improved. Wilderness impacts are documented in a Minimum Requirements Analysis.

Locations: Focus on area around mile posts 22-77 of the Denali Park Road.
NHPA Assessment of Effect: No Historic Properties Affected.

54.Denali Seismic Monitoring Sites (2021-2025)

Description: To monitor seismic activity within Denali National Park and use seismic station in the park as part of the statewide seismic array to better locate and characterize seismic activity throughout Alaska. Applicants will continue operating and maintaining our four existing monitoring stations and three communications sites inside the park. They visit these stations only as needed for upgrades or repairs, which averages once every 2-3 years.

Locations: Castle Rocks (CAST): 63.4188, -152.0844, Kantishna Hills (KTH): 63.5527, -150.9233, Thorofare (TRF): 63.4502, -150.2893, MCK (McKinley Park): 63.73228, -148.93678, Double Mountain Repeater (DBL_R): 63.60657, -149.47013, Mt. Healy Repeater (HLY_R): At park radio facility on Mount Healy Murie Science Learning Center Receive (MSLC_R): At MSLC
NHPA Assessment of Effect: No Adverse Effect.

55.Changing climate, warming permafrost, and infrastructure: Landslide hazard assessment in Denali National Park (2023-2025)

Description: This University of Alaska - Fairbanks study has three main objectives: 1) To better understand the permafrost mechanisms driving increased mass-movements in Denali National Park (DENA); 2) Monitor mountain permafrost in DENA; and 3) Map the extent of mountain permafrost along the Denali Park Road (DPR). Permafrost boreholes will be reestablished at Mile 18, and possibly at 51, 69, and 89 of Denali Park Road. The Igloo Canyon/Zena Slide transect perpendicular to the road will have 5-6 stations each with an air and ground surface temperature sensor, soil moisture sensor, trail camera and measuring rod (snow depth), weather station, and buried datalogger (30 cm x 30cm x 30cm).

Additional work in 2025 to include compilation of available data on infrastructure, climate, terrain, and subsurface conditions. Field work will update the USMP rating and photos with a focus on hot spots (Mile 44.8 Bear Cave Slump, Mile 37 Tattler Grade/Landslide, Mile 35.1 Zena Slide, Mile 30.5 Teklanika Bluffs, Mile 19.8 Active Layer Detachment, Mile 14.6 Savage Bridge area-sagging road, Mile 3.4 Dog Kennels parking area)

Locations: Throughout the park
NHPA Assessment of Effect: No Adverse Effect; monitoring may be required for some proposed locations.

56.Shallow Lake Monitoring Project-CAKN (2023-2028)

Description: The shallow lake monitoring project is part of the Central Alaska Network (CAKN) vital signs monitoring program. In 2025, the CAKN will continue the shallow lakes long term monitoring project in Denali National Park and Preserve. Between 70 and 100 lakes will be synoptically sampled within the park boundary. Lakes will be sampled July 6-10 using a helicopter based out of Whitefish Lake and July 7-18 using a floatplane. Each lake will be sampled for water quality, zooplankton composition and abundance, basic lake morphometry, vegetation composition, soil thaw depth. This information will be used in combination with remote sensed imagery to estimate surface water dynamics and determine the condition of shallow lake ecosystems. In addition, soundscape equipment will be used

to collect wood frogs presence and abundance. Staff will use either a tent camp set up at the Lake Minchumina airstrip or the facilities at Friday Creek for our primary base camps.

Locations: Caribou Lake, Billberg Lake, and 161 lakes (near Minchumina Basin and Eaolian Lowlands)
NHPA Assessment of Effect: No Historic Properties Affected.

57. Continued CAKN glacier monitoring in Denali National Park and Preserve (2023-2032)

Description: This continuation of glacier monitoring on Kahiltna Glacier first conducted by in 2016, and more broadly by others since 1991. The goals of that program are to track annual changes in mass balance (snow accumulation and snow/ice melt), and to relate those changes to climatic (temperature, precipitation, etc.) and dynamic (changes in glacier geometry) forcings. To monitor glacier conditions at multiple sites at elevations of approximately 14,300', 10,000', 7100', 6300', and 3800' along the centerline of the Kahiltna Glacier, we have a glacier stake: a single, 1" diameter pole placed permanently vertically in the snow/ice surface of the glacier. We typically make measurements with GPS units and dig snow pits and/or drill shallow snow cores (using a hand-drill) to measure snow qualities. At the 10,000' site, we have no stake but we make the GPS measurements and do the snow pits/drilling.

Locations: Kahiltna Glacier
NHPA Assessment of Effect: No Potential to Cause Effect.

58. Monitoring the pattern and consequences of spruce bark beetle infestation on Denali white spruce forests (2023-2032)

Description: The purpose of this study is to create a baseline understanding of the variation in white spruce forest composition and structure in areas anticipated to be affected by an ongoing spruce bark beetle outbreak, and then monitor the consequences of this outbreak over time.

Field methods and activities at 59 project specific plots and approximately 40 existing plots) include small metal plot markers installation, soil profiles, soil samples, tree cores, vegetation structure and composition variable measurements.

Locations: Throughout the frontcountry area of the park including Rock Creek, Riley Creek, Middle Teklanika River.
NHPA Assessment of Effect: No Adverse Effect.

59. Gleaning Causal Information from a Public Broadcast for Backcountry Management (2023-2025)

Description: NPS project to test the viability of a passive acoustic monitoring program for flight tracking within the park. The Automatic Dependent Surveillance-Broadcast (ADS-B) is a public radio signal from aircraft. The NPS has developed a means to log the broadcast passively. With sufficient

coverage, ADS-B information could eventually replace our current track submittal process and help relax the temporal sampling necessary to sustain an acoustic monitoring program. ADS-B logger deployments would provide sufficient strategic coverage to detect aircraft along the typical routes from eastern portals to the mountain. In 2025, the ADS-B loggers will operate for the purposes of overlapping with the Onboard GPS data which will be submitted per the contract schedule by park air taxi operation concessioners.

Locations: Mount Healy, Mount Thorofare
NHPA Assessment of Effect: No Adverse Effect.

60. Denali Acoustic Monitoring Program (2023-2032)

Description: This study would reauthorize repeat acoustic monitoring at 121 unique monitoring locations. The purpose of monitoring sites varies considerably, but core purposes have included: (A) ensuring compliance with Denali's 2006 Backcountry Management Plan, (B) observing the effectiveness of management actions [including adoption of quiet technologies, best practices, or contract stipulations], and (C) phenology studies. Other unforeseen management purposes might arise, but they are unlikely. We deploy equipment with a sparse 3 x 2-meter footprint and negligible ground disturbance (2x spiral anchors); at least one month in duration. We use signage to advise any visitors who may encounter the system.

Locations: Throughout the park
NHPA Assessment of Effect: No Potential to Cause Effect.

61. Collecting dragonfly larvae for mercury analysis as part of the nationwide Dragonfly Mercury Project 2023-2032

Description: This study will be part of ongoing nationwide citizen science research that is evaluating the utility of dragonfly larvae (Odonata: Anisoptera) as indicators of mercury status in national parks. Groups of 15 or fewer staff members and citizen scientists will collect dragonfly larvae, water samples, and sediment samples from lakes and ponds along the park road corridor and the George Parks Highway. Access will be by foot, hiking to sites within 1.5 miles of the road corridor. A total of up to 80 dragonfly larvae will be collected in the park each year, from two or more sites.

Locations: Lakes and ponds within 1.5 miles of the Denali Park Road or Parks Highway
NHPA Assessment of Effect: No Potential to Cause Effect.

62. Long term ecological monitoring of streams (renewal) 2023-2027

Description: The goal of the study has been to conduct long term monitoring of a number of key streams along the Park Road corridor identified through the classification of streams carried out following an intensive study of 43 streams in 1995. In this way we are able to identify long term natural variation in stream communities to be used as a baseline with which to measure anthropogenic or long-term natural change (e.g., due to global warming). The study involves collecting six replicate samples with a Surber sampler at 10 study streams where we have long term records. Replicates will be collected

randomly and preserved in ethanol prior to sorting and analysis. The sample sites will be at road crossings upstream of the bridge.

Locations: Savage Creek, Sanctuary Creek, Hogan Creek, Igloo Creek, N4, Tattler Creek, East Fork Tributary (near East Fork cabin), Highway Pass Creek, Little Stoney Creek West and Moose Creek. Clearly the sites Highway Pass Creek, Little Stoney Creek West and Moose Creek will not potentially be possible till after the road is opened to administrative traffic again.
NHPA Assessment of Effect: No Historic Properties Affected.

63.Dendrogeomorphology in Denali National Park (2023-2025)

Description: This University of Alaska - Fairbanks, Institute of Northern Engineering research project seeks to understand past episodes of mass movement and permafrost thaw using the tree-ring record. The field methods include will deploying up to 50 HOBO inclinometers on trees at the Eider Landslide and along the Park Road between the Park Headquarters and the Savage River; deploy 10 dendrometers onto trees to determine the precise timing of stem growth in each area; and extract tree cores (5mm or 10 mm) from up to 100 white spruce trees in each of two areas.

Locations: Eider Landslide (north of McKinley Village and west of railroad tracks) and along the Park Road Miles 3 and 15
NHPA Assessment of Effect: No Historic Properties Affected.

64. LTER: Changing disturbances, ecological legacies, and the future of the Alaskan boreal forest (2023-2028)

Description: This project will determine how legacies constrain the response of the Alaskan boreal forest to climate change, how these legacies will affect future ecosystem trajectories, and what the local, regional, and global impacts of these changes are now and in the future. Summary of proposed field methods and activities:

Abrupt thaw features with significant erosion will be sampled in the Toklat River area; At each site, collect samples from the outflow to analyze DOC, DIC, nutrients, bioavailability, and radiocarbon age of DOC. Each abrupt thaw site will also be monitored for rate of expansion using gps, as well as measuring the thaw depth, organic soil depth, vegetation height, and normalized difference vegetation index. Researcher has requested the use of a UAS/drone for imagery collection at the Wigand Creek site.

Locations: Throughout the park
NHPA Assessment of Effect: No Adverse Effect.

65.Small Unmanned Aircraft Systems (sUAS) in NPS Operations (2024-2028)

Description: This programmatic approval for NPS UAS (Unmanned Aircraft Systems) operations in Denali Park and Preserve permits training flights, use in emergencies (e.g., Search and Rescue), and administrative flights as defined under NPS Reference Manual 60 - Aviation Management, Chapter 12

and Appendix 8. Permissions for UAS flights under NPS operational control for administrative purposes, such as:

a. Scientific study
b. Search and rescue operations
c. Fire operations, law enforcement
d. Natural and cultural resource stewardship
e. Education/interpretation
f. Training flights

Locations: Throughout the Park
NHPA Assessment of Effect: No Adverse Effect.

66. Alaska Range Dall's Sheep Ecology and Health Assessment, ADFG (2024-2027)

Description: The NPS proposes to continue a research permit to Alaska Department of Fish and Game, Department of Wildlife Conservation, for a Sheep Ecology and Health Assessment study (2024-2027).

Critical issues identified by managers of Dall's sheep in Alaska are: 1) identifying the drivers of recent population declines, 2) the potential effects of selective harvest over time, 3) the potential effects of climate change on sheep populations and their habitat quality and quantity and 4) the potential effects of the pathogen *Mycroplasma ovipneumoniae (M. ovi)* or other diseases introduced to native mountain sheep populations.

The control subpopulation is in designated wilderness in DENA, where ADF&G and NPS have conservation concerns due to declines in the Alaska Range sheep population. The minimum count (treatment) survey area on the east side of the Parks highway in the Central Alaska Range is proximate to DENA and has similar weather patterns, habitat, and sheep densities. The study areas are within the GMU's 20A, 20C6 that are negative for customary and traditional use. This study has been in planning for numerous years due to stakeholder concerns for the sheep population within the central Alaska Range. The study areas were further identified to replicate a collaborative study initiated in June of 2024 between ADF&G and NPS in the central and eastern Brooks Range.

In Denali, the study would occur in mostly wilderness areas on the north side of the Alaska Range. The survey area for DENA extends west from the Parks Highway to the Herron River drainage along the north side of the Alaska Range.

The general approach of this study is to GPS/VHF mark and maintain 30 rams and 30 ewes in two different study areas (up to 60 sheep per study area) and follow the individuals through the course of the study. The treatment study area described above is an area with a general season full curl hunting paradigm. The control study area within DENA has minimal hunting pressure as only federally qualified individuals are allowed to hunt in the area.

In spring (March/April) 2025, ADFG collaborators will return to the park to conduct the next phase of the study, which involves placing collars on 30 ewes within the same areas as the collared rams. Spring

capture timing allows us to collect pregnancy data from the ewes, which is a valuable piece of data for the study that is not attainable otherwise. Spring is the season when most ewe captures have and currently occur throughout Alaska in large part because the presence of snow helps facilitate capture operations and reduces the risk of the animals overheating. The capture crew and pilot team have done hundreds of ewe captures in the past 10 years and there is good precedence for spring capture work on ewes in terms of animal welfare.

Location: Throughout the Park in Sheep habitat.
NHPA Assessment of Effect: Undetermined.

67. Resampling permanent vegetation plots for the landscape scale vegetation monitoring program

Description: This project will detect, quantify, and investigate patterns in the distribution and abundance of plants species, as well as any changes in community composition and vegetation structure at a landscape scale. Work will remeasure attributes of vegetation in 26 study areas that were originally established and measured during the period 2001-2010. This is about half of the original study areas installed during the first phase of the program.

The measurements that we will make for the second iteration of sampling in our plots will be almost completely without impacts to vegetation or other resources. The plots installed in the first iteration of sampling have been marked using permitted monuments, additional monuments would be limited to replacements for existing ones that have gone missing. Soil observations (that required small excavations) are done only for the first iteration of sampling and these activities will not be repeated for any plots already sampled during this round of sampling.

Location: Throughout the Park
NHPA Assessment of Effect: No Adverse Effect.

68. Spruce beetles as ecosystem engineers: Effects of spruce mortality on insect biodiversity and fire behavior in Denali (2024-2026)

The NPS proposes to continue a research permit for a US Geologic Survey (Upper Midwest Environmental Sciences Center) research project that will quantify how spruce bark beetle-induced tree mortality will impact pollinator and beetle biodiversity in the Denali boreal forest ecosystem and, secondarily, model how changing fuel loads may affect wildfire behavior in these forests. Fieldwork started in May 2024 and will include 2025 and 2026 summer field seasons.

Location: Work will focus primarily along the southern Park boundary and near the Visitor Center, where the spruce beetle outbreak is currently the most intense. But we will also sample from some 'control' sites within the park (including within the Wilderness area) along the Park road. Exact locations will be determined based on most recent outbreak information in the spring.
NHPA Assessment of Effect: No Adverse Effect.

69. Enhancing Pile Burning Strategies in Alaska's Boreal Forests - A Comprehensive Approach, 2024-2025

Description: The NPS proposes to continue a research permit for a Northern Arizona University (NAU) research project that will investigate the seasonal effects of fuels management debris pile burning in the frontcountry (entrance area fire management units) in cooperation with the Denali Fire Management Program staff. Prior to burning, Dead fuel moisture samples will be collected by hand from three size classes of fuel found within the pile (fine, medium, coarse wood) and analyzed in the laboratory for moisture content. Other significant disturbances proposed before burning include drilling small (4mm diameter) bore holes up to 30cm in depth from the mineral soil surface. These bore holes will be created in order to insert temperature sensors into the soil profile below actively burning piles. As part of drilling these small holes into the mineral soil, a 15x150x~25cm channel will be excavated from the organic soil layer in order to gain access to the mineral soil surface and protect sensors from excessive heat. Finally, all charcoal and burned material will be collected by hand from the surface of the burn site within a 30x30cm area for laboratory analysis at NAU.

Location: Denali Frontcountry
NHPA Assessment of Effect: No Adverse Effect.

70. Stabilize Hazards at Historic Slippery Creek Mine for Visitor and Wildlife Safety

Description: The NPS proposes to stabilize hazards at Slippery Creek Mine for visitor and wildlife safety. Slippery Creek Mine is a historic mine site which was determined eligible for the National Register on September 25, 1995, and significant on a local level as a physical representative of mining exploration and extraction in Denali National Park and Preserve. The property consists of former underground workings (adit), a multi-room cabin, airstrip, and connector road. The Slippery Creek Mine Cabin was built prior to 1941 - the three-room log cabin is unique in design and location for DENA. Work would include roof stabilization.

Location: Slippery Creek Mine
NHPA Assessment of Effect: No Adverse Effect.

71. AKR Invasive Plant Mgmt Team: Targeted Invasive Species Surveys and Removal

Description: The National Park Service proposes to continue invasive species surveys (specific focus on Elodea) and removal near the entrance area.

Location: Horseshoe Lake, Park Road intersection with George Parks Highway for invasive Hawksbeard removal work.
NHPA Assessment of Effect: No Historic Properties Affected.

72. Reconnaissance Program to Observe Permafrost Soils and Ground Ice

Description: The National Park Service proposes to issue a research permit to the researcher from USGS-Alaska Science Center for activities to assess permafrost dynamics along the Denali Park Road corridor to help NPS advance adaptation strategies for permafrost degradation and support decision-making. For this 2025 reconnaissance program, the main tasks are to: 1) measure thaw depths (up to 128 sites), 2) drill and sample permafrost soils and ground ice (up to 128 sites), 3) conduct geophysical surveying, and 4) install shallow (< 16 ft) ground temperature sensors at (up to 15 sites outside of wilderness). Methods include using a hand-held steel probe (0.4" diameter), auger (1" diameter), and barrel drill (to collect cores of 2.5" OD). Identified 128 sites they may visit for probe and auger work. Installation will only occur in up to 15 sites. Three of the 128 proposed sites in Headquarters. Total of 10 days in field in late summer.

Location: along the Park Road from road from milepost 0 to 43.3.
NHPA Assessment of Effect: No Adverse Effect.

73. Evaluate Effects of Spruce Bark Beetle Outbreak on a Critically Endangered Lichen, 2024-2025

Description: The National Park Service proposes to remeasure established long-term vegetation plots with a focus on non-vascular species post-spruce bark beetle outbreak in cooperation with University of Northern Colorado in plots on the southeastern boundary of Denali National Park and Preserve. No ground disturbance or installation of permanent plot markers; camping for 7 days per sampling bout, 4 people in a crew, 4 sampling bouts total.

Location: Four sampling locations: One between the East and West Forks of the Yentna River, one near the toe of the Kahiltna Glacier, and two adjacent to Coffee River.
NHPA Assessment of Effect: No Adverse Effect.

74. Monitoring the Reproductive Success and Productivity of Golden Eagles in Denali National Park, expanded (2025-2034)

Description: The project is a continuation of long-term Golden Eagle monitoring started in 1988. Golden Eagles are a Vital Sign for the Central Alaska Network (CAKN). One of the largest reported nesting populations of Golden Eagles occurs in the northeast region of Denali National Park and Preserve, Alaska. Denali's long-term monitoring program revealed some of the ecological relationships between Golden Eagles, their prey and their habitat emphasizing the ecological role this species plays in the mountainous regions of Denali.

Study Objectives:
(1). Annually document occupancy and reproductive success of golden eagles and nest success of gyrfalcons.
(2) Annually estimate nesting phenology of both species.
(3) Determine age structure and turnover rates of territorial population.

(4) Document year-round movements of eagles and constraints to their survival.
(5) Collect shed feathers as a source of DNA.

Occupancy is determined during two standardized aerial surveys and additional ground-based observations as needed. In late March through mid-April, adult Golden Eagles are captured using a netlauncher or bownet baited with locally obtained carrion. Juveniles are captured at the nest. Captured eagles are banded, sampled, and tagged with a lightweight transmitter (2% of body weight). Holding time is 30 to 45 min. Capture and tagging techniques are effective, used across the species range and risk of mortality is very low. Capture stations are temporary and established out of sight of the park road, and only in areas with adequate snow cover.

Naturally shed feathers are collected at a sample of nests each year. The feathers are sent to the USGS Alaska Science Center molecular genetics lab where the feather pulp is extracted. DNA is extracted from the feather pulp and is used to identify individuals. After this activity, the feathers are deposited with the US Fish and Wildlife Eagle Repository in Colorado. These activities are conducted under the required federal and state permits.

Location: Northern foothills of the Alaska Range
NHPA Assessment of Effect: No Potential to Cause Effects.

75.Impacts of an epic northbound spruce beetle outbreak on soil biogeochemistry, mycorrhizal associations, and future forest composition in the Alaska Range

Description: The NPS proposes to issue a research permit for a study that will capitalize upon the intersection of a massive northbound spruce beetle outbreak with a well-established network of long-term ecological research plots in the park to address knowledge gaps in the effects of spruce beetles on soil biochemistry, mycorrhizal associations, and forest composition. The study methods include observation of vegetation structure and composition; sap flows on six spruce trees near the Air Quality Station; soil respiration monitoring; and collection of fine root samples and small soil cores (2cmx10cm deep) once per season.

Location: All installations and sampling will occur within 50 cm of the focal trees' stems, at existing, park-wide 1992 Long-Term Ecological Monitoring (LTEM) plots, 2024 bark beetle plots, and locations near existing infrastructure like the Air Quality shed.
NHPA Assessment of Effect: To be determined.

Interpretation and Education

76. Temporary Installations in the East Fork Area (2022- 2026)

Description: Separate NHPA consultation was sent in December 2021. Due to the deterioration of the road at the Pretty Rocks Landslide (Mile 45.4 on the Denali Park Road), visitor transportation is not allowed west of the East Fork of the Toklat River (Mile 43) until safe and reliable access through the Polychrome area is restored. In the meantime, transit trips are offered as far as the East Fork Bridge and

the Tundra Wilderness Tour (TWT) is offered as far as the East Fork Cabin site. In 2022, NPS widened a small section of the Park Road and completed construction of a bus turnaround with an 85 ft turning radius on the east side of the bridge. No further construction is anticipated at the Bus Turnaround for the remainder of this project.

The following temporary installations would be placed in the East Fork area each summer for the duration of the road closure: There would be an interpretation ranger and a dispatcher stationed at the bridge, which would require 1-2 movable hard sided structures (mounted on trailers) to be temporarily placed in the pullout next to the road for staff use and may include instruments and solar panels temporarily mounted on or near the structures for radio amplification. There may also be an open-air tent temporarily placed for interpretative and informational displays, as well as temporary visitor information signs. There would be a temporary emergency shelter (such as a parked bus) provided for visitors in case of inclement weather or wildlife safety concerns. This project would add temporary crowd control barriers on the East Fork bridge for visitor safety. Approximately five portable toilets would be temporarily placed in the area for visitor use. Space would be available for several vehicles to park. Temporary plastic parking curbs would be placed in pullout on west side of bridge - to be removed at end of summer. In order to reduce potential social trails forming, temporary closure signs may be posted, and a temporary staircase would be installed for visitors to access the west side of the East Fork River bar from the bridge area. A bike rack and food storage container may also be temporarily placed in the area. A temporary road closure sign would be placed on the road west of the bridge. Two portable toilets (one ADA) would be temporarily installed, with screening, near the Ghiglione Bridge for emergency use by JV tour bus passengers and gravel would be added to flatten the surface for safe ADA accessible approach. All of these temporary installations would be removed after use once road access farther west is restored.

Locations: East Fork Bridge and Site area, around mile post 43 of the Park Road.
NHPA Assessment of Effect: Adverse Effect to Historic Properties due to the widening of the Park Road at the East Fork Bridge.

77. Improve Visitor Navigation on Park Road Through Road Sign Updates

Description: This project includes a series of a comprehensive update to frontcountry directional roadside signs. In 2024, we propose installing 4 new road signs at road junction locations that do not currently have signs, which would require digging for post installation at those locations. In 2024 installed winter directional signs.

In 2025, we propose installing updated signs in the Riley Creek and Denali Bus Depot area.

Location: Denali Frontcountry
NHPA Assessment of Effect: No Adverse Effect.

78. Strengthen Visitor Connections Through Innovative Printed Publications (2024-2025)

Description: Annual publications include the Unigrid, Summer Guide and Winter Guide.

Location: Publication
NHPA Assessment of Effect: No Potential to Cause Effect.

79. Connect Park Visitors with Key Safety and Orientation Messages at Kiosks and Waysides (2024-2027)

Description: Design and install new and updated information panels at the Denali Visitor Center Campus in 2024 and 2025. Future components of this project would involve installing similar signs in other frontcountry areas between Miles 0-15 to create a unified sense of welcome and clarity to trip planning and safety information wherever visitors enter the park in the frontcountry.

Location: Frontcountry of the Park
NHPA Assessment of Effect: No Potential to Cause Effect.

80. Design, Fabricate, and Install Sub-Trailhead and Trail Signage

Description: Complete design of sub-trailhead sign panels associated with the frontcountry trails. Directional posts and Trailhead signs are complete. This project finishes the sub-trailhead signs, which reinforce visitor wayfinding and safety messages at major trail junctions. Signposts will be installed in May.

Location: Front Country of the Park
NHPA Assessment of Effect: No Potential to Cause Effect.

81. Alaska Place Name Signage

Description: The park intends to share some of the original Alaska Native place names of geographic features that are now contained within Denali National Park and Preserve. The Denali Park Road crosses several rivers and streams and these bridges currently have brown, wooden signs on them displaying the water body's name and the elevation. We propose replacing these signs in-kind with ones that also display the Alaska Native names. This project could cover other distinct locations currently identified by signs in Denali or new locations that do not have existing signs. The Alaska Native place name would be identified and approved through conversations with tribal partners and approved in advance by the Denali management for use in the park maps, signs, and other public outreach materials. Any new signs requiring new posts will follow the applicable Denali Cultural Landscape Report design (e.g., Park Road, Headquarters Historic District), location guidelines and any ground disturbance will be reviewed for need for archaeology monitoring.

Location: Frontcountry of the Park
NHPA Assessment of Effect: To be determined.

82.Kennels Sled Room Exhibit Redesign

Description: Begin planning for redesign of the Kennels building Sled Room exhibit design.

Location: Kennels Building, Park Headquarters Historic District.
NHPA Assessment of Effect: Undetermined.

83.Produce Audio/Video Media to Support Key Safety and Orientation Messages

Description: Development of a visitor orientation/welcome to Denali video and specific topic videos related to bicycle safety, wildlife safety, backcountry safety, wolf monitoring project. Develop podcast-like formats using oral histories gathered from former employees and concession bus drivers related to the history of the park road. Develop a podcast-like format to support a walking tour of the Headquarters Historic District.

Location: N/A
NHPA Assessment of Effect: No Potential to Cause Effect.