

**US Department of the Interior
North Cascades Ecosystem**



Joint Record of Decision Grizzly Bear Restoration Plan

April 2024

Lead Federal Agencies: National Park Service and US Fish and Wildlife Service

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RECORD OF DECISION

Grizzly Bear Restoration Plan North Cascades Ecosystem

INTRODUCTION

The Department of the Interior, National Park Service (NPS) and US Fish and Wildlife Service (FWS), have prepared this Record of Decision (ROD) on the final *North Cascades Ecosystem Grizzly Bear Restoration Plan / Environmental Impact Statement* (plan/EIS). This ROD has been prepared in accordance with the requirements of the National Environmental Policy Act of 1969, as amended (NEPA), its implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508), the Department of the Interior’s NEPA regulations (43 CFR 46), and NPS Director’s Order 12: *Conservation Planning, Environmental Impact Analysis and Decision-making* and accompanying handbook. This ROD includes a summary of the purpose and need for action, synopses of alternatives considered and analyzed in detail, a description of the selected alternative, the basis for the decision, and a description of the environmentally preferable alternative. Citations can be found in the “Reference” section of the final plan/EIS.

BACKGROUND

The grizzly bear (*Ursus arctos horribilis*) was listed as threatened in the lower-48 states under the Endangered Species Act (ESA) on July 28, 1975. Following the listing, the FWS initiated a recovery effort directed at establishing viable populations in portions of four states where the grizzly bear was known or believed to exist at the time of listing. Grizzly bears in the western United States are managed within six recovery zones: the Greater Yellowstone Ecosystem (GYE) grizzly bear recovery zone in northwestern Wyoming, southwest Montana, and southeastern Idaho; the Northern Continental Divide Ecosystem (NCDE) grizzly bear recovery zone in northwestern Montana; the Cabinet-Yaak Ecosystem (CYE) grizzly bear recovery zone in extreme northwestern Montana and northern Idaho; the Selkirk Ecosystem grizzly bear recovery zone in northern Idaho and northeastern Washington; the Bitterroot Ecosystem (BE) grizzly bear recovery zone in central Idaho and western Montana; and the North Cascades Ecosystem (NCE) grizzly bear recovery zone in northwestern and north-central Washington. Grizzly bears currently occupy four of these recovery zones: the GYE, NCDE, CYE, and Selkirk Ecosystem.

The greater NCE, including its Canadian and US portions, is bounded roughly by the Fraser River on the north, the Okanogan Highlands and Columbia Plateau on the east, Snoqualmie Pass to the south, and the Puget lowlands to the west. The US and Canadian portions of the greater NCE constitute a large block of contiguous habitat that spans the international border but is isolated from grizzly bear populations in other parts of the two countries. For the purposes of this EIS, the NCE grizzly bear recovery zone within the US portion of the ecosystem is hereafter referred to as the NCE. The US portion of the ecosystem spans the crest of the Cascade Range from the temperate rainforests of the west side to the dry ponderosa pine forests and sage-steppe on the east side. Historical records indicate that grizzly bears once occurred throughout the NCE. A grizzly bear habitat evaluation was conducted from 1986 to 1991 in response to recommendations made in the 1982 FWS nationwide Grizzly Bear Recovery Plan. This habitat evaluation and a report by the Interagency Grizzly Bear Committee (IGBC) NCE Subcommittee, concluded that the US portion of the NCE contains sufficient habitat quality to maintain and recover a grizzly bear

population (Servheen et al. 1991; Almack et al. 1993). Recent carrying capacity modeling suggests the most plausible carrying capacity for the US portion of the NCE, under current habitat conditions, is approximately 280 bears (Lyons et al. 2018). The Lyons et al. 2018 model was further developed to include the effects of climate change on habitat quality up to 100 years in the future, and the most plausible carrying capacity for the NCE increased to 482 to 578 bears (Ransom et al. 2023a).

Despite the historical presence of grizzly bears in the NCE and the availability of sufficient habitat to recover and maintain a viable population, there is no confirmed evidence of current grizzly bear presence within the NCE grizzly bear recovery zone in the United States (Rine et al. 2020). There has been only one confirmed detection of a grizzly bear in the greater NCE in the past 10 years, which occurred in British Columbia (IGBC NCE Subcommittee 2016; Rine et al. 2020). Since there has been no confirmed evidence of grizzly bears within the NCE in the United States since 1996, any remaining bears in the NCE would not meet the accepted definition for a population (i.e., evidence of 2 adult females with cubs or 1 adult female tracked through two litters). Therefore, the FWS considers grizzly bears to be functionally extirpated in the NCE (88 *Federal Register* [FR] 41560, June 27, 2023).

PURPOSE AND NEED FOR ACTION

The purpose of this plan/EIS is to restore the grizzly bear to the NCE, a portion of its historical range. Action is needed at this time to:

- Restore grizzly bears to the NCE where they have been functionally extirpated from the ecosystem.
- Contribute to the restoration of biodiversity of the ecosystem to build ecological resilience and for the benefit and enjoyment of present and future generations of people.
- Enhance the probability of long-term survival of grizzly bears in the NCE and thereby contribute to overall grizzly bear recovery through redundancy in multiple populations and representation in a variety of habitats.
- Support the recovery of the grizzly bear to the point where it can be removed from the Federal List of Endangered and Threatened Wildlife.

ALTERNATIVES CONSIDERED

Alternatives analyzed in the plan/EIS describe the various short- and long-term actions that the NPS and FWS could implement for grizzly bear restoration in the NCE. The alternatives under consideration in this plan/EIS include a required “no action” alternative plus two action alternatives that were developed by an interdisciplinary planning team and with feedback from the public, Tribes, other agencies, and the scientific community during the planning process. A detailed description of the alternatives carried forward, including elements common to all alternatives and all action alternatives, is provided in chapter 2 of the plan/EIS. Alternatives analyzed in the plan/EIS include the following:

- Alternative A. Under alternative A (no action), existing management practices would be followed. Under the no action alternative, options for grizzly bear restoration would be limited and rely primarily on natural recovery. Current management actions would continue, focused on improved sanitation, motorized access management, outreach, and educational programs to provide information about grizzly bears and grizzly bear recovery to the public, and research and monitoring to determine grizzly bear presence, distribution, habitat, and home ranges. Based on the Revised Code of Washington 77.12.035, described in chapter 1 of the plan/EIS,

alternative A is the only alternative evaluated in detail that would allow for full participation by Washington Department of Fish and Wildlife (WDFW). Under this alternative, any grizzly bears in the ecosystem would continue to be managed as a threatened species with the special 4(d) rule (50 CFR 17.40(b)) under section 4(d) of the ESA governing the regulation of grizzly bears in the lower-48 states and NPS regulations in 36 CFR, chapter 1, governing resource management in areas within the NPS's jurisdiction.

- Elements Common to All Action Alternatives. Both action alternatives would seek to restore a population of grizzly bears by capturing individuals from areas where populations are relatively healthy and releasing them into the NCE. Both action alternatives involve the same restoration population of 200 grizzly bears, translocation strategy, education and outreach, sanitation strategy, and habitat protection, but differ substantially in management options and strategies. Under both action alternatives, the agencies would aim to release 3 to 7 grizzly bears per year for 5 to 10 years to achieve an initial population of 25 bears. Based on the projected range of mortality and emigration rates for bears released into the NCE under the primary phase of alternatives B and C, the analysis assumes that an additional 11 bears would need to be released in the NCE (for a total of 36 bears in the primary phase). This approximate timeline is intended to reestablish reproduction in the NCE. Each of these alternatives is anticipated to result in a population of 200 bears within approximately 60 to 100 years. The restoration of 200 grizzly bears is not a recovery goal for purposes of the ESA. Recovery goals are determined through a separate recovery planning process. A population of 200 bears in the NCE would contribute to recovery of grizzly bears in the lower-48 states.

The capture and release of grizzly bears would take place between June and September each year. Grizzly bears that would be considered ideal candidates for capture and release would be typically independent subadults between 2 and 5 years of age that had not yet reproduced and had exhibited no history of human conflict. The target sex ratio for initial releases would be approximately 60% to 80% female and 20% to 40% male. Under both action alternatives, once an initial population of up to 25 grizzly bears is achieved, a transition to the adaptive management phase would occur. In this phase, additional grizzly bears could be released to address human-caused sources of mortality, genetic limitations, or to improve population distribution and sex ratio.

- Alternative B. Under alternative B, grizzly bears restored to the NCE would be managed as a threatened species with the existing special rule (50 CFR 17.40(b)) under section 4(d) of the ESA governing the regulation of grizzly bears in the lower-48 states and NPS regulations in 36 CFR, chapter 1, governing resource management in areas within the NPS's jurisdiction. This rule allows grizzly bears to be taken under specific circumstances. These circumstances include defense of life; federal, state, or Tribal scientific or research activities; or removal of grizzly bears involved in conflicts by authorized federal, state, or Tribal authorities.
- Alternative C. (Selected Alternative). Under alternative C, the FWS would designate grizzly bears in the US portion of the NCE and surrounding areas as a nonessential experimental population (NEP) under section 10(j) of the ESA. An experimental population is a group of translocated plants or animals (inclusive of their progeny) that is geographically separate from other nonexperimental populations of the species. In designating populations as experimental, the FWS must determine whether they are "essential" or "nonessential" to the survival of the species as a whole and must consider the relative effects of establishing an experimental population on the species' recovery. Section 10(j) provides for the management of

experimental populations under special regulations. These regulations specify what “take” of the species is allowed or not allowed under the ESA within the experimental population area.

SELECTED ALTERNATIVE

The NPS and FWS have selected alternative C (hereinafter referred to as the selected alternative), as described in the plan/EIS, for implementation. The selected alternative will designate grizzly bears in the US portion of the NCE and surrounding areas as a 10(j) NEP under section 10 of the ESA. During the primary phase of restoration, the agencies will aim to release 3 to 7 grizzly bears per year for 5 to 10 years to achieve an initial founder population of 25 bears. This approximate timeline is intended to reestablish reproduction in the NCE. Once an initial population of up to 25 grizzly bears is achieved, a transition to the adaptive management phase will occur. In this phase, additional grizzly bears could be released to address human-caused sources of mortality or removal, genetic limitations, or to improve population distribution and sex ratio. The selected alternative is anticipated to result in the achievement of a restoration population goal of 200 bears within approximately 60 to 100 years.

The FWS delineated a proposed NEP area boundary for the experimental population to: (1) encompass the geographic extent of potential movement of bears restored to the NCE plus a geographic margin of management assurance beyond this extent to allow for monitoring and management of the reintroduced population under 10(j) special regulations, and (2) ensure geographic separation from extant grizzly bear populations in the lower-48 states. The geographic extent for the grizzly bear NEP includes all of Washington state except an exclusion area around the Selkirk Ecosystem grizzly bear recovery in the northeastern part of the state where a population of bears currently exists. The three management areas are described in chapter 2 of the plan/EIS.

The NPS and FWS anticipate that the FWS will retain the experimental population designation until the grizzly bear has been delisted due to recovery, regardless of whether the boundaries of the listed entity change. However, under the selected alternative, if grizzly bears of the NEP experience unexpectedly high natural mortality or if donor bears are not available, or if we conclude that we and our partners have insufficient funding for an extended period to support management of the NEP, the NPS and FWS may consider ending the releases. This would be done only after coordination with partners before making any decisions to suspend the restoration program. The following take of grizzly bears will be allowed in all management areas in the NEP area (see FWS final 10(j) rule, expected to be codified at 50 CFR 17.84(y)):

- Self-defense or the defense of others based on a good-faith belief that the actions taken were to protect the person from bodily harm.
- Deterrence, or an intentional, nonlethal action to haze, disrupt, or annoy a grizzly bear out of close proximity to people or property to promote human safety, prevent conflict, or protect property. Any deterrence must not cause lasting bodily injury to any grizzly bear (i.e., permanent damage or injuries that limit the bear’s ability to effectively move, obtain food, or defend itself for any length of time), or death to the grizzly bear. Any person who deters a grizzly bear must use discretion and act safely and responsibly in confronting grizzly bears. The 10(j) rule provides some examples of acceptable and unacceptable deterrence techniques, and the FWS provides the most current guidelines.
- Incidental take of a grizzly bear, provided such take is unintentional and not due to negligent conduct, the take is incidental to an otherwise lawful activity, the take is promptly reported to the FWS; and if the incidental take results from US Forest Service (USFS) actions on national

forest lands in Management Area A, it will be allowed if the USFS has maintained its “no net loss” agreement and implemented food storage restrictions throughout USFS-managed lands in Management Area A.

- Research and recovery actions by authorized agencies (a federal, state, or Tribal agency designated by the FWS in a memorandum of understanding to assist in implementing the section 10(j) rule) with prior approval from the FWS if such action is necessary for scientific purposes and certain recovery actions.
- Relocation of grizzly bears with prior authorization from the FWS by authorized agencies, who may live-capture grizzly bears and release them in a remote location agreed to by the FWS, WDFW, and applicable land management agency for any of the following reasons: for a grizzly bear involved in conflict; to prevent unnatural use of food materials that have been reasonably secured from the bear or unnatural use of anthropogenic foods; after aggressive (not defensive) behavior toward humans results in injury to a human or constitutes a demonstrable immediate or potential threat to human safety; as a preemptive action to prevent a conflict that appears imminent or in an attempt to prevent habituation of bears; or for any other conservation purpose for the grizzly bear as determined by the FWS.
- Removal of grizzly bears involved in conflict, with prior approval of the FWS, by an authorized agency, including lethal removal, but only if: (1) it is not reasonably possible to otherwise eliminate the threat by nonlethal deterrence or live capturing and releasing the grizzly bear unharmed in a remote area; and (2) the taking is done in a humane manner (with compassion and consideration for the bear and minimizing pain and distress) by a federal, state, or Tribal authority of an authorized agency.

Additional conditioned lethal take of grizzly bears could occur in Management Areas B and C with the approval of the FWS. With prior written authorization from the FWS, individuals may lethally take a grizzly bear within 200 yards of legally present livestock if a depredation has been confirmed by the FWS or an authorized agency, the FWS or an authorized agency determines it is not reasonably possible to otherwise eliminate the threat by nonlethal deterrence or live-capturing and releasing the grizzly bear unharmed in a remote area, and the taking is done in a humane manner. Such authorizations will be valid for 5 days; after 5 days, the FWS may extend the authorization of lethal take an additional 5 days if there are additional grizzly bear depredations or injuries to livestock and circumstances indicate the offending bear can be identified.

In Management Area C, the FWS may authorize conditioned lethal take to individuals if the FWS or an authorized agency determines both of the following: a grizzly bear presents a demonstrable and ongoing threat to human safety or to lawfully present livestock, domestic animals, crops, beehives, or other property; and it is not reasonably possible to otherwise eliminate the threat through nonlethal deterrence or live-capturing and releasing the grizzly bear unharmed. The FWS would also only authorize conditioned lethal take if the individual requesting the written authorization is the landowner, livestock producer, or designee (e.g., an employee, or lessee); and the taking is done in a humane manner. Also in Management Area C, any individual may take (injure or kill) a grizzly bear in the act of attacking livestock (including working dogs on private land) under specified conditions, which include the absence of excessive unsecured attractants (e.g., carcasses or bone piles), that there was no intentional feeding or baiting of the grizzly bear or wildlife, prompt reporting of the take, and the area remains undisturbed to allow for review.

Within all management areas, under the section 10(j) rule, any grizzly bear killed must be reported within 24 hours to the FWS, and the carcass and any associated collars or ear tags surrendered to the FWS.

The selected alternative also includes the following individual elements:

Capture. Grizzly bears that do not have a history of conflicts with humans may be captured from multiple source areas, as described in the 10(j) rule. The agencies will seek to find source areas that have a healthy grizzly bear population so that removal of grizzly bears will not affect population viability since the capture and removal of grizzly bears will represent a loss for the source population. The entities managing the donor source area must be willing to donate bears that meet the selection criteria and allow trapping of an adequate number of grizzly bears. All regulatory requirements will be fulfilled prior to translocation of bears, including coordination with federal, state, Tribal, and Canadian entities, as necessary. In addition to having a healthy population, the agencies will prioritize source areas that are ecologically similar to the NCE (e.g., ecosystems where bears do not rely on salmon for a significant portion of their diet). The lead agencies will focus on capturing grizzly bears that share a similar ecology and food economy to potential release areas.

Only independent grizzly bears (i.e., post-separation from mothers) will be candidates for reintroduction. The range of grizzly bear ages and sex ratios preferred for translocation are targets, and this range is anticipated to vary based on the bears captured and available for translocation. The ages or sexes of grizzly bears targeted for capture will be adjusted through the adaptive management process based on program success or failure.

Grizzly bears will be captured using culvert traps. Where permissible, helicopter support could be used for the capture and could include the use of helicopter-based capture darting. If needed, baited foot snares could also be used, but are not preferred. Chemical immobilization procedures will meet minimum standards of training and qualifications for handling wildlife according to the NPS *Natural Resource Management Reference Manual* #77, chapter 5, section G (Chemical Immobilization and Sterilization Agents) and additional standards established by the Interagency Grizzly Bear Study Team for proper grizzly bear capture, handling, and immobilization techniques. Most trapping will occur in nonwilderness areas accessible by truck. The capture and release of grizzly bears will generally occur between June and September, depending on the seasonal conditions of the capture and release site(s) selected and abundance of food in the release areas.

Release. Grizzly bears will be transported from capture locations to staging areas by truck and trailer. Staging areas will be located in previously disturbed, nonwilderness areas large enough for the safe landing of a helicopter, parking for a fuel truck, and any other grizzly bear transport and handling needs.

Grizzly bears will be transported from the staging area as soon as possible by helicopter and will likely remain at the staging areas for only a few hours, depending on weather and helicopter availability. The NPS and FWS will prioritize use of release sites on NPS lands. National forest lands are also included as potential release sites if unforeseen circumstances prevent access to release sites on NPS lands (e.g., poor weather or aircraft issues) that could jeopardize human and bear safety. Release areas will represent prime grizzly bear habitat, while the release sites will be based on selected habitat criteria, connectivity to other areas, and the need to have grizzly bears close to one another to facilitate interaction and ultimately breeding.

Additional criteria for acceptable release sites would include the following:

- The area will largely consist of high-quality seasonal habitat; such as readily available berry-producing plants that are known grizzly bear foods.

- The area will be largely roadless, an adequate distance from high visitor use and open motorized areas, and have low human use.
- Bear Management Units (BMUs) with a high amount of core area will be prioritized.
- The area will have a suitable helicopter landing site.

Each release could take up to 8 hours (1 day) depending on the distance between staging and release areas, potentially resulting in 3 to 7 days of helicopter use per year for releases. Helicopters will make up to four round-trip flights (approximately 144 total flights), traveling at least 500 feet above the ground, and up to four landings in wilderness per grizzly bear for up to 36 bears. NPS or FWS staff will conduct an initial release site reconnaissance flight to determine suitability for the release and check nearby areas for active campsites or other human activity. Once the release site is confirmed for use, the grizzly bear will be ferried in by helicopter and released.

Monitoring. Monitoring of grizzly bears in the NCE will use an adaptive management approach. Elements to measure or monitor during the adaptive management phase will include habitat selection, instances of conflicts between humans and grizzly bears, reproductive success and rate of population growth, grizzly bear mortality and mortality sources, and genetic composition of the population.

Grizzly bears released into the NCE will be fitted with global positioning system (GPS) collars prior to release to monitor habitat use and spatial distribution, and tissue samples will be collected prior to release for genetic monitoring purposes. Recapture of grizzly bears may be conducted periodically to maintain a GPS-collared sample of the population. Agency staff will seek to retrieve dropped GPS collars or respond to bear mortality on foot, although helicopter use could be considered in less accessible areas.

Under the *Wilderness Act of 1964* (16 United States Code [USC] 1131 et seq.), both the NPS and USFS will complete separate minimum requirements analyses to evaluate the necessity and impacts for all flights that require landing in designated wilderness lands under their management. Alternative tools and access will be used when possible to avoid impacting wilderness.

Radio collar data will be downloaded approximately every 2 days. Real-time data can be unreliable in difficult terrain and steep topography with vegetative cover; it can also reduce the useful life of the collar. Conversely, receiving data every 2 days will suffice to provide general trend information regarding bear movement. Monitoring activities will take place from early spring to late fall and will be accomplished through cooperation between the agencies. Flights will occur periodically depending on collar status (i.e., mortality signal) and to monitor for reproductive success and population growth. Camera stations with hair snagging to collect genetic samples will be set up in remote areas to monitor grizzly bear presence and reproductive success.

Grizzly bears that die during the primary phase of restoration as a result of any source of mortality, human-caused or otherwise, will be replaced on a one-to-one basis. Likewise, grizzly bears that emigrate from the NCE or are removed because of conflict with humans will be replaced. This approach will continue until the initial population size of 25 is reached. Limited and infrequent additions to the population in subsequent years to support genetic diversity may be necessary unless genetic connectivity with other populations is established.

Public Education and Outreach. Under the selected alternative, increased public education efforts will be tailored to the current stage of the restoration program. At the outset of initial restoration activities, the NPS and FWS will provide public updates as often as every week. These updates will provide generalized information on grizzly bear movements and locations. As the restoration process moves forward, these updates will take place less frequently, unless specific events with the potential to affect grizzly behavior,

such as a large fire, occur. Each agency will use the NCE grizzly bear website to post the results of management actions and annual monitoring but will not disclose the exact locations of collared grizzly bears in the NCE. Outreach to residents and visitors, including hikers and hunters, will be increased to aid them in avoiding encounters with grizzly bears, including education about bear spray and proper storage of attractants.

Improved Sanitation on Public Lands. Sanitation measures will continue to be implemented for both black bears and grizzly bears, including bear-resistant trash receptacles and bear-resistant food storage lockers in NPS and USFS campgrounds, and a bear-resistant food canister loan program (on NPS lands). At developed campgrounds, signage will advise campers to maintain clean campsites and to not keep any food items inside tents. Current backcountry campground design protocols separating food preparation/storage areas from tent pads on NPS lands will continue to be implemented. In addition, signs will be installed in prominent locations at trailheads in the NCE warning hikers and other recreationists that they are entering bear habitat and listing measures to minimize the risks of traveling and camping in bear country.

Access Management. Occasional short-term closures (a few hours up to a few days) of an area could take place on a case-by-case basis, based on bear activity (e.g., a female with cubs near high human-use areas) or timing and location of a release. There would be short-term closures at the staging areas, as described above. Closures may also occur if a bear is feeding on a carcass, consistent with current management for all large carnivores. No long-term closures or modifications to public access would be implemented because of grizzly bear restoration.

Habitat Management. The NPS will strive to achieve the current approach of no net loss of core area on lands under management direction provided in the Ross Lake GMP (NPS 2012c). It is anticipated the USFS will continue to manage grizzly bear core area under the 1997 no net loss interim agreement on USFS lands unless the agreement is superseded. The FWS, NPS, and USFS will update the baseline conditions with updated vegetation, trail, and road data and memorialize the no net loss of core area approach for federal lands within the US portion of the NCE recovery zone. These revisions will update the baseline and include metrics such as core habitat and trail data based on current conditions.

SECTION 7 OF THE ENDANGERED SPECIES ACT CONSULTATION

National Oceanic and Atmospheric Administration – National Marine Fisheries Service. The NPS is serving as the lead federal agency for purposes of section 7(a)(2) of the Endangered Species Act (ESA, 16 United States Code [USC] 153 et seq.) for consultation with the National Marine Fisheries Service (NMFS) addressing the potential impacts of the grizzly bear restoration in the NCE on for four listed salmonids: Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*), Puget Sound steelhead (*O. mykiss*), Upper Columbia River spring-run Chinook, and Upper Columbia steelhead. The NPS requested informal consultation with NMFS and NMFS concurred with the NPS's assessment that the proposed action may affect, but is not likely to adversely affect, the four listed salmonid populations occurring in the NCE or their designated critical habitat.

US Fish and Wildlife. The FWS is serving as the federal action agency for purposes of section 7(a)(2) of the ESA for the species under its jurisdiction. The FWS completed a biological opinion in support of intra-agency formal consultation on the potential effects of the restoration of grizzly bears to the NCE pursuant to the 10(j) rule to the grizzly bear, bull trout, and whitebark pine, and concluded the proposed action would not likely jeopardize these listed species, or destroy or adversely modify designated critical habitat. To track potential effects to these species or critical habitat, the NPS and FWS will implement the monitoring requirements described in the incidental take statement accompanying the biological opinion.

The FWS determined that the proposed action may affect, but is not likely to adversely affect Canada lynx, gray wolf, marbled murrelet, wolverine, northern spotted owl, western yellow-billed cuckoo and Mount Rainier white-tailed ptarmigan.

SECTION 106 AND TRIBAL CONSULTATION

Washington State Historic Preservation Office. In accordance with section 106 of the National Historic Preservation Act, the NPS and FWS have conducted consultation with the Washington Department of Archaeology and Historic Preservation concerning impacts on cultural resources. The Washington State Historic Preservation Office concurred with the finding of no effect on historic properties and archeological resources.

Tribal Consultation. Over the course of the EIS process, staff meetings or briefings took place with representatives from Confederated Salish and Kootenai Tribes, Confederated Tribes of the Colville Reservation, Confederated Tribes of the Umatilla Indian Reservation, Nlaka'pamux Nation Tribal Council, Okanagan Nation Alliance (Syilx), Pawnee Nation, Swinomish Indian Tribal Community, Upper Skagit Indian Tribe, Yakama Nation, and the Northwest Indian Fisheries Commission.

Responses or comment letters were received during the EIS process from: the Confederated Tribes of the Colville Reservation, Lummi Nation, Nlaka'pamux Nation Tribal Council, Snoqualmie Tribe, Sauk-Suiattle Indian Tribe, Upper Skagit Indian Tribe, and Yakama Nation. Tribal consultation will continue into the implementation of the project.

BASIS OF DECISION

Alternative C has been selected for implementation. In identifying its preferred alternative, the NPS and FWS considered factors such as the likelihood of successful grizzly bear restoration, public safety, long-term management, impacts on natural and socioeconomic resources, and how well the alternatives meet the purpose and need and objectives of the plan. Alternative C best accomplishes the purpose and need for action because it will use the management flexibilities afforded by a 10(j) NEP designation to: prevent the permanent loss of grizzly bears in the NCE and support their recovery; contribute to the restoration of biodiversity of the ecosystem for the benefit and enjoyment of present and future generations of people; support Tribal cultural and spiritual values associated with grizzly bears; and provide other Pacific Northwest residents and visitors the opportunity to experience grizzly bears in their native habitat. Because alternative C anticipates a timeline of 60 to 100 years to achieve a restoration goal of 200 grizzly bears in the NCE, it will allow the agencies and affected public to adapt to living with grizzly bears in the NCE. Alternative C will also provide the best opportunities to expand public outreach and education efforts to build an understanding about grizzly bears and grizzly bear recovery. Over the long term, it is anticipated that alternative C will best meet the purpose and need of grizzly bear restoration in the NCE. For these reasons, alternative C was selected for implementation.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS and FWS are required to identify the environmentally preferable alternative in the ROD. The agencies, in accordance with the NEPA regulations, define the environmentally preferable alternative as the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources (43 CFR 46.30).

After completing the environmental analysis, NPS and FWS have identified alternative C as the environmentally preferable alternative. Designation of grizzly bears released into the US portion of the NCE as a 10(j) NEP will provide authorized agencies with greater management flexibility should conflict situations arise and to reduce the likelihood of conflict situations. The designation allows for the advancement of recovery objectives by providing an opportunity to reestablish a self-sustaining population within the ecosystem. Any management actions will be consistent with the overall goal of establishing and conserving the NEP while promoting social tolerance and human safety.

CONCLUSION

Overall, among the three alternatives considered, the selected alternative (alternative C) best meets the purpose and need of the plan/EIS, is expected to efficiently restore grizzly bears to the NCE through greater management flexibility, and fulfill the NPS's statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. The selected alternative incorporates all practicable means to avoid or minimize environmental harm and will not result in the impairment of park resources or values or violate the NPS Organic Act.

The required "no-action period" before approval of the ROD was initiated on March 22, 2024, with the US Environmental Protection Agency's *Federal Register* notification of the filing of the final plan/EIS.

With their signatures, the Directors certify as to their respective agencies that the agency has considered all of the alternatives, information, analyses, and objections submitted by state, Tribal, and local governments and public commenters for consideration by the lead and cooperating agencies in developing the EIS. The officials responsible for implementing the selected alternative are the Regional Directors for the NPS (Regions 8, 9, 10, and 12) and FWS (Pacific Region).

FINAL AGENCY AUTHORIZATION

National Park Service

Approved:

Date:

A handwritten signature in blue ink that reads "Charles F. Sams III". The signature is written in a cursive style with a horizontal line extending from the end.

4/23/2024

Charles F. Sams III
Director
National Park Service

FINAL AGENCY AUTHORIZATION

US Fish and Wildlife Service

Approved:

Date:

 4/23/2024

Martha Williams
Director
US Fish and Wildlife Service

APPENDIX A – NON-IMPAIRMENT DETERMINATION
NATIONAL PARK SERVICE NON-IMPAIRMENT DETERMINATION
NORTH CASCADES ECOSYSTEM
GRIZZLY BEAR RESTORATION PLAN / ENVIRONMENTAL IMPACT STATEMENT
COMPLIANCE WITH NPS MANAGEMENT POLICIES UNACCEPTABLE IMPACT
AND NON-IMPAIRMENT STANDARD

As described in National Park Service (NPS or Service) *Management Policies 2006*, § 1.4.4, the NPS Organic Act prohibits the impairment of park resources and values. *Guidance for Non-Impairment Determinations and the NPS NEPA Process* (September 2011) provides guidance for completing non-impairment determinations for NPS actions requiring preparation of an environmental assessment (EA) or environmental impact statement (EIS) pursuant to the National Environmental Policy Act (NEPA). The NPS has completed a non-impairment analysis for the impacts to North Cascades National Park Complex and determined that it will not result in impairment of park resources, or in unacceptable impacts as described in § 1.4.7.1 of the *NPS Management Policies 2006*.

Sections 1.4.5 and 1.4.6 of *Management Policies 2006* further explain impairment. Section 1.4.5 defines impairment as an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Section 1.4.5 goes on to state:

An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

Section 1.4.6 of *Management Policies 2006* identifies the park resources and values that are subject to the no-impairment standard. These include:

- the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;
- appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;
- the park's role in contributing to the national dignity, the high public value and integrity, and

the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and

- any additional attributes encompassed by the specific values and purposes for which the park was established.

North Cascades National Park Complex (park complex) comprises North Cascades National Park, Ross Lake National Recreation Area (Ross Lake NRA), and Lake Chelan National Recreation Area (Lake Chelan NRA), a complementary suite of protected lands, united by a contiguous wilderness overlay. As stated in the 2012 Foundation Document:

Combining these three distinct units under a single unique administration recognizes their shared purpose of preserving the core of the greater North Cascades ecosystem and wilderness while advancing their individual purposes (Foundation Document, Page 1).

The significance and importance of each park resource analyzed in this non-impairment determination has been informed by the North Cascades National Park Complex enabling act and the Foundation Document, which identify fundamental resources and values for the park (FRVs). FRVs are those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined by NPS managers to warrant primary consideration during planning and management processes because they are deemed essential to achieving the purpose of the park and maintaining its significance. FRVs are closely related to a park's legislative purpose and are articulated in a park's Foundation Document. There are numerous FRVs mentioned in the Foundation Document, and those natural and cultural resource related FRVs that may be affected by actions authorized under the selected action and are related to resources subject to the non-impairment standard as set forth in *NPS Management Policies 2006* are as follows:

Ecosystem and Biodiversity

Fundamental Resources and Values:

Diverse and Extensive Tracts of Intact Habitat. These areas provide for a diversity of life forms and are essential for native species, especially those with extensive home ranges such as wolves, wolverines, and grizzly bears.

Water Resources. Abundant glaciers, snowfields, lakes, ponds, tarns, wetlands, rivers, and streams of exceptional quality support ecological integrity.

Fish Communities. The park complex's ecosystems support viable populations of resident and anadromous fish species that are found in their native habitats and the park complex's lakes, streams and reservoirs.

Wildlife Communities. The park complex contains a diversity of wildlife communities that are found in their native habitats, including rare and listed species.

Culture and History

Fundamental Resources and Values:

Ethno-historic Resources. Human connections to, and experiences in, the North Cascades have been expressed through a variety of means, which have created the history, legends, and cultural traditions associated with the North Cascades.

Fundamental resources and values associated with the impact topics dismissed from detailed analysis in the plan/EIS and will not be addressed in this non-impairment determination include air quality, greenhouse gas emissions, vegetation, geology and soils, cultural and historical resources (excluding ethnographic resources), visual resources, soundscapes, and environmental justice.

A determination of non-impairment for the selected action is made for each of the impact topics carried forward for detailed analysis in the final plan/EIS. NPS non-impairment analyses normally do not include a discussion of impacts to visitor experience, socioeconomics, public health and safety, environmental justice, land use, park operations, and wilderness because these topics do not constitute impacts to park resources and values subject to the non-impairment standard under the Organic Act. *See Management Policies § 1.4.6.*, Each resource or value for which non-impairment is assessed and the rationale supporting the non-impairment determination is described below.

As a basis for evaluating the potential for impairment or unacceptable impacts on the park complex's resources, the NPS relied on the *Final North Cascades Ecosystem Grizzly Bear Restoration Plan/Environmental Impact Statement* (plan/EIS). The plan/EIS evaluates the impacts to resources within the North Cascades Ecosystem, including the park complex.

The plan/EIS includes analysis of impacts to the wildlife and fish, wilderness character, visitor use and recreational experience, socioeconomics, public and employee safety, and ethnographic resources. Consistent with NPS guidance described above, the NPS has not included a non-impairment determination here for wilderness, environmental justice, socioeconomics, and visitor experience.

The plan/EIS evaluated the impacts of two action alternatives including the selected alternative. The selected alternative would seek to restore a population of 200 bears through the capture and release of grizzly bears into the North Cascades Ecosystem (NCE) through the release of 3 to 7 grizzly bears per year for 5 to 10 years to achieve an initial population of 25 bears. This approximate timeline is intended to reestablish reproduction in the NCE. The selected alternative is anticipated to result in a restoration population of 200 bears within approximately 60 to 100 years. This restoration population is not a recovery goal for purposes of the Endangered Species Act (ESA). Recovery goals are determined through a separate process. The restoration population of 200 bears would contribute to the overall future recovery goals.

The capture and release of grizzly bears would take place between June and September each year. Release site(s) would be selected based on quality of food in the release areas. Grizzly bears that would be considered ideal candidates for capture and release would be typically independent subadults between 2 and 5 years of age that had not yet reproduced and had exhibited no history of human conflict. The target sex ratio for initial releases would be approximately 60% to 80% female and 20% to 40% male. Under the selected alternative, once an initial population of up to 25 grizzly bears is achieved, a transition to an adaptive management phase would occur. In this phase, additional grizzly bears could be released to address human-caused sources of mortality, genetic limitations, or to improve population distribution and sex ratio.

Under the selected alternative, the US Fish and Wildlife Service (FWS) would designate grizzly bears in the US portion of the NCE and surrounding areas as a nonessential experimental population (NEP) under section 10(j) of the ESA. An experimental population is a group of translocated plants or animals (inclusive of their progeny) that is geographically separate from other nonexperimental populations of the species. In designating populations as experimental, the FWS must determine whether they are "essential" or "nonessential" to the survival of the species as a whole and must consider the relative effects of establishing an experimental population on the species' recovery. Section 10(j) provides for the

management of experimental populations under special regulations. These regulations specify what “take” of the species is allowed or not allowed under the ESA within the experimental population area.

NON-IMPAIRMENT EVALUATION BY RESOURCE

Grizzly Bears

Grizzly bears will be part of, and contribute to, several FRVs under the ecosystem and biodiversity category listed in the foundation document (NPS 2012). The restoration of grizzly bears to the NCE and the park complex would ultimately be a benefit to those FRVs. Through the restoration efforts, grizzly bears will be captured from a source population, transported and released into designated management areas. Through this process, adverse impacts could occur to the grizzly bear as well as the grizzly source populations. Although there is no evidence suggesting any long-term, negative impacts on grizzly bears from capturing and collaring, there are three possible animal welfare concerns: the stress and risk to bears during capture and handling; the potential for an ill-fitting collar resulting in physical discomfort or harm; and the possibility that collars do not fall off, thereby staying on longer than desired. Potential negative impacts could result from the chemical immobilization required for the translocation process with the concern being this may impair the mobility of the grizzly bear for a prolonged period with negative consequences on individual fitness. Capture and collaring will be performed in such a manner as to minimize potential for harm to each animal. The actual number of bears trapped to achieve up to 7 individuals suitable for translocation annually is uncertain, but targeted trapping methods, especially helicopter capture, will reduce the risk of unnecessary capture and stress. After recovering from capture and translocation events, grizzly bears entering novel environments tend to have higher movement rates, greater displacement, and spend more time in poor-quality habitats and habitats with higher mortality risk compared to resident bears. The substantial habitat suitable for, but currently unoccupied by grizzly bears in the NCE, may reduce the potential for displacement, as would capture and release of younger bears because they are more likely to remain in the target release area.

Although impacts to grizzly bears associated with capture and release are predicted to be relatively small and compatible with the goals of grizzly bear reintroduction in the NCE (i.e., most bears are predicted to survive and are likely to remain in the NCE), several uncertainties have been identified associated with these predictions. These uncertainties will be addressed using adaptive management, which will permit actions to be adjusted as information about successes and failures is obtained. Given the slow release of grizzly bears (i.e., 3 to 7 per year) and the careful adaptive management approach that will be implemented, the risk of any significant adverse impacts to grizzly bears will be low.

The selected alternative will remove up to 7 grizzly bears per year over an initial 5-to-10-year period from trapping efforts occurring in interior British Columbia and/or the NCDE and GYE. While it is likely that grizzly bears will be translocated from multiple source populations, the plan/EIS includes a conservative approach that assumes up to 7 grizzly bears could come from one source population in any given year. Because grizzly bears in British Columbia are not currently hunted, and other sources of human-caused mortality are low, the removal of less than 3% of the population per year will not affect the viability of the local population (Boyce, Derocher, and Garshelis 2016). Given the limited number of grizzly bears that will be translocated (the agencies estimate up to 36 grizzly bears will be needed to obtain an initial population of 25 individual bears) and in consideration with other ongoing grizzly bear management programs in both ecosystems, the source populations in the NCDE and the GYE are anticipated to remain stable and persist despite the translocation of up to 36 individuals. If a mix of source populations could be achieved, impacts to individual populations will be lower than those predicted using the conservative analysis.

Although there will be intermittent and temporary impacts to the grizzly bears being translocated as well as the source populations resulting from the capture release and monitoring, the selected alternative is expected to have long-term, beneficial impacts to grizzly bears by restoring them to a substantial habitat where they have a historical presence, which supports the FRVs of the park complex to maintain a diversity of wildlife communities. The beneficial impact of the selected alternative will contribute to the NCE's fundamental value of providing diverse and extensive tracts of intact habitat as well as wildlife communities (NPS 2012). Therefore, implementation of the selected alternative will not result in impairment of grizzly bears on NPS lands.

Other Wildlife and Fish

The NCE is characterized by a high level of variation in climate and topography, resulting in a wide spectrum of habitats within the NCE that are home to a diverse population of fish, birds, and other wildlife. The importance of the diverse communities of wildlife and fish species as well as their habitats is expressed in the FRVs related to ecosystems and biodiversity mentioned above. Management actions associated with grizzly bear restorations activities, including the use of aircraft or other vehicles and equipment during release and subsequent monitoring of grizzly bears, could affect other wildlife species. Additionally, wildlife or fish species such as elk and deer, black bear, and salmonids could be affected in terms of grizzly bear predation or competition for resources.

As predators, grizzly bears have the potential to impact prey species in the NCE; however, grizzly bears are omnivores that primarily feed on vegetation. Grizzly bears released into the NCE are expected to have an opportunistic feeding strategy and may prey on ungulates if encountered during spring calving/fawning season. Grizzly bears are expected to kill deer and elk, mainly fawns/calves, and small numbers of moose, particularly neonates. Because grizzly bears restored to the NCE will be largely from areas with similar berry-based food economies, their consumption of ungulates could be lower than the GYE, although bear diets would ultimately depend on prey availability. Additionally, ground squirrels and other small mammals, including marmots, are expected to be an important late summer and autumn source of protein for grizzly bears. Even if the restoration population goal for grizzly bears is achieved, the number of bears in the NCE will be low relative to the abundance of small mammalian populations that are potential prey. Therefore, grizzly bears are expected to have minor impacts on ungulate populations with no expected impact to small mammal populations.

Other wildlife in the NCE may compete with grizzly bears for prey or other resources. The species most likely to compete or interact with released grizzly bears include gray wolf, coyote, wolverine, fisher, Canada lynx, cougar, bobcat, and black bear. Adverse impacts to these species are expected to be limited as there will likely be little competitive pressure present with the limited number of grizzly bears initially being released. Once the restoration population of 200 bears is achieved and grizzly bears expand throughout secure core habitats in the NCE, competitive pressure will increase, however, species population levels will not be affected.

The selected alternative will require approximately 144 helicopter flights over 5 to 10 years, although some additional flights may be necessary for collar retrieval and incidental actions. The noise produced by vehicles, associated human activities, and other disturbances needed to complete the capture and release process will result in adverse impacts on wildlife through temporary disturbances and avoidance of active staging and release areas. Impacts will be limited in duration to 3 to 7 days per year during the summer and fall and will be localized to capture and release sites and helicopter flight paths. However, management actions to maintain or enhance grizzly bear habitat or to minimize conflict with humans in

backcountry areas will benefit other wildlife through maintenance of habitat security and increased awareness of proper sanitation practices.

Under the selected alternative, restoration activities will not disturb fish habitat. The number of grizzly bears translocated to the NCE will initially be small, at 3 to 7 bears released per year for 5 to 10 years, and the population is not expected to occupy all available habitat in the NCE. While it is possible that grizzly bears, as opportunistic omnivores, could use fish as a food source, fish are not expected to be a primary food source. While there is the potential for increased adverse impacts with a restored grizzly bear population of 200 bears after 60 to 100 years, the impacts will still be limited due to the abundance of fish relative to the number of grizzly bears, even if certain individual bears were to prey on fish when seasonably abundant. Given the small number of grizzly bears restored to the ecosystem, the number of bears will not be sufficient to generate adverse impacts on fish populations from predation.

Under the selected alternative, potential impacts on other wildlife and fish due to predator-prey interactions and interspecific competition with grizzly bears will be minimal. Negative impacts will be uncommon and localized because measures to manage grizzly bears will only be authorized on an as-needed basis, if certain conditions are met in accordance with the 10(j) rule. Overall, restoring grizzly bears in the NCE will contribute to restoring missing ecological interactions that help to shape fish and wildlife habitat through seed dispersal, increasing nutrient availability, and controlling prey populations (see van Manen, Haroldson, and Gunther 2017). It is not expected that the restoration will impact any species at the population level in the NCE; therefore, current and future generations of visitors will have similar opportunities to view other wildlife in the park complex. By restoring grizzly bears back to the ecosystem where they were once native, the restoration will contribute to North Cascades FRVs of having diverse and extensive tracts of intact habitat, plant communities, fish communities, and wildlife communities (NPS 2012). As a result, the selected action will not result in impairment of other wildlife and fish on NPS lands.

Ethnographic Resources

Previous research indicates that other ethnographic resources, such as traditional gathering, hunting and fishing areas, or areas of spiritual or ceremonial use, are also likely present within the North Cascades (Ford 1993; Boxberger 1996). The FRV, ethno-historic resources, is part of the culture and history category of FRVs discussed in the Foundation Document (NPS 2012). This FRV relates to human connections to, and experiences in, the North Cascades that have been expressed through a variety of means that have contributed to the history, legends, and cultural traditions associated with the North Cascades (NPS 2012). Additionally, those FRVs that relate to ecosystem and biodiversity contribute to a natural setting representing the North Cascades and thereby contribute to ethnographic resources as they would relate to traditional gathering, hunting, and fishing. The grizzly bear is an important part of Indigenous culture and history to many, but not all, Indigenous groups in the Northwest. Impacts on ethnographic resources rely on traditional ecological knowledge and consultation with each Indigenous group to understand how the grizzly bear is connected to the oral histories, ceremonies, and sacred areas. The release of grizzly bears may affect the ability of some Tribes to use areas important for hunting and gathering or ceremonial use under both action alternatives. It is anticipated that, while grizzly bears would impact some specific plant and animal ethnographic resources, such as huckleberries and salmon, the impacts would not be so large as to reduce the availability of these resources for Indigenous communities, especially while the grizzly bear population is small. The potential for competition could increase, however, as the grizzly bear population grows over time. The potential for restricted access to some areas could lead to adverse impacts on other ethnographic resources. Because the potential impacts from the

proposed action vary and will be unique to each Indigenous group, the potential impacts are ongoing and developed through the consultation process and are provided under the “Tribal Consultation” header in chapter 4 of the plan/EIS. The agencies will continue to consult with the Native American Tribes and First Nations to ensure that all activities and their corresponding impacts are minimized or avoided. Although there will be various impacts to ethnographic resources from the restoration of grizzly bears, ethnographic records demonstrate varying degrees of significance within their traditional subsistence practices, cultures, and landscapes (Rine et al. 2018). Because the restoration of grizzly bears will contribute an important cultural tradition to some Indigenous communities, the selected action will not impair NPS’s fundamental values of cultural landscapes and ethno-historic resources (NPS 2012).

SUMMARY

The NPS has determined that implementation of the selected alternative will not constitute impairment of the resources of North Cascades National Park, Ross Lake National Recreation Area, or Lake Chelan National Recreation Area (the park complex). This conclusion is based on consideration of the park complex’s purpose and significance, a thorough analysis of the environmental impacts described in the EIS, comments provided by the public and others, and the professional judgment of the decision-maker guided by the direction of the *NPS Management Policies 2006*.

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APPENDIX B – MINIMUM REQUIREMENTS ANALYSIS



MINIMUM REQUIREMENTS ANALYSIS FRAMEWORK WORKBOOK

“...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act...”

— Section 4(c), Wilderness Act of 1964

Title

NORTH CASCADES ECOSYSTEM GRIZZLY BEAR RESTORATION

Step 1: Determine If Administrative Action May Be Necessary

Issue Statement

The grizzly bear (*Ursus arctos horribilis*) was listed as threatened under the Endangered Species Act (ESA) on July 28, 1975. Following the listing, the US Fish and Wildlife Service (FWS) initiated a recovery effort directed at establishing viable populations in portions of four states where the grizzly bear was known or believed to exist at the time of listing. Grizzly bears in the western United States are managed within six recovery zones: the Greater Yellowstone Ecosystem (GYE) grizzly bear recovery zone in Wyoming and southwest Montana; the Northern Continental Divide Ecosystem (NCDE) grizzly bear recovery zone in northwest Montana; the Cabinet-Yaak Ecosystem (CYE) grizzly bear recovery zone, which includes extreme northwestern Montana and the northern Idaho panhandle; the Selkirk Ecosystem grizzly bear recovery zone of northern Idaho and northeastern Washington; the Bitterroot Ecosystem (BE) grizzly bear recovery zone in central Idaho and western Montana; and the North Cascades Ecosystem (NCE) grizzly bear recovery zone of northwestern and north-central Washington (USFWS 1993).

The NCE constitutes a large block of contiguous habitat that spans the international border between the United States and Canada but is isolated from grizzly bear populations in other parts of the two countries. The NCE includes all of the North Cascades National Park Service (NPS) Complex (11% of the recovery zone) (which includes the Stephen Mather Wilderness) and large portions of the Mount Baker Snoqualmie and Okanogan-Wenatchee National Forests (which together make up 74% of the recovery zone), as well as protected lands and de facto wilderness in British Columbia, Canada. Based on a qualitative assessment by the Interagency Grizzly Bear Committee technical review team, habitat within the NCE was considered of sufficient quality and quantity to support a population of 200 to 400 grizzly bears (Servheen et al. 1991). Recent carrying capacity modeling suggests the most plausible carrying capacity for the NCE, under current habitat conditions, is approximately 280 bears (Lyons et al. 2018). The

Lyons et al. (2018) model was further developed to include effects of climate change on grizzly bear habitat quality up to 100 years in the future, and the most plausible carrying capacity for the NCE increased to 482–578 bears (Ransom et al. 2023).

Grizzly bears were decimated in the NCE by direct killing, and despite the historical presence of grizzly bears in the NCE and the availability of sufficient habitat to recover and maintain a viable population, there is no confirmed evidence of grizzly bear presence within the NCE grizzly bear recovery zone in the United States today (Rine et al. 2020). The most recent confirmed observation within the US portion of the NCE was in 1996, south of Glacier Peak. The most recent confirmed observation in the NPS Complex was 1991. There has been no verified evidence of grizzly reproduction in the NCE for at least 30 years. Therefore, the FWS considers grizzly bears to be functionally extirpated in the NCE (USFWS 2022). Grizzly bears were listed under the ESA and still present in the NCE when the Stephen Mather Wilderness was designated and their population extirpation represents a degradation of the natural quality of wilderness character through time.

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Options Outside of Wilderness

Is this issue wilderness dependent, or can an action occur outside of wilderness to properly resolve the issue now or over time?

Can the issue be resolved or addressed outside of wilderness?

☐ YES

STOP – EXPLAIN BELOW AND DO NOT TAKE ACTION

☒ NO

EXPLAIN BELOW AND PROCEED TO THE NEXT SECTION

Land management agencies and other regulatory agencies (i.e., NPS, FWS, USFS, and WDFW) have worked for 31 years to facilitate the natural recovery of grizzly bears within the NCE by means of habitat protection, sanitation, and education, but the population has declined to the extent that grizzly bears are now functionally extirpated from the ecosystem. The NCE Grizzly Bear Recovery Plan Supplement specifies that among the criteria to realize recovery of this population is that reproducing bears are distributed throughout the recovery area (USFWS 1997). This includes the 99% of North Cascades National Park that is now designated wilderness. Human intervention is now necessary to restore grizzly bears to the NCE. In order to maximize the probability of a successful restoration (i.e. grizzly bears establish home ranges and reproduce to establish a local population), grizzly bear translocations into the NCE would need to occur at carefully identified release sites that maximize each grizzly bear's chance of survival and future reproduction. Specifically, locations of release sites must 1) largely consist of high-quality seasonal habitat such as readily available berry-producing plants that are known grizzly bear foods, 2) be largely roadless, with limited or no motorized use and low human use, and 3) be located within Grizzly Bear Management Units (BMUs) with a high amount of core area. The North Cascades Grizzly Bear Recovery Zone is divided into 42 BMUs, only 15 of which have a high amount (>70%) of core area, and of those, 14 are primarily within wilderness. There are few potential suitable release sites for grizzly bears within the NPS Complex that are outside of designated wilderness, and no NPS areas outside of wilderness are sufficient in size or habitat quality to sustain a grizzly bear population on their own. Regardless of whether or not individual grizzly bears would be released within wilderness directly, it is assumed that grizzly bears would travel to and establish home ranges in at least portions of the Stephen Mather Wilderness that lie within the NPS Complex because the majority of high-quality habitat persists in the designated Wildernesses. Monitoring grizzly bears within wilderness would be necessary to detect grizzly bears in the NCE, estimate the survival rate of released grizzly bears and their offspring, determine the number of reproducing females and the extent and location of their home ranges, and proactively manage potential human-bear conflict situations. This monitoring cannot occur outside wilderness if grizzly bears are located within designated wilderness.

Criteria for Determining Necessity

Based on the legal requirements in Section 4(c) of the Wilderness Act, one or more of the factors A-D below must be met for any action to be considered.

Do any of the criteria below apply?

A. Wilderness Character

Based on the Issue Statement, are any of the qualities of wilderness character degraded, impaired, or threatened to a degree that it is necessary to analyze potential action otherwise prohibited by Section 4(c) to address the issue?

UNTRAMMELED

Select your answer.

☐ YES ☒ NO

This action is not necessary to preserve the untrammeled (unhindered or unmanipulated) quality of the Stephen Mather Wilderness.

UNDEVELOPED

Select your answer.

☐ YES ☒ NO

This action does not include removal of existing structures or a reduction of developments. Action is not necessary to preserve the undeveloped quality of the wilderness character of the Stephen Mather Wilderness.

NATURAL

Select your answer.

☒ YES ☐ NO

The grizzly bear, indigenous to the NCE and the wildernesses within it, has been functionally extirpated from the NCE and is currently a federally- and state-listed threatened species. This extirpation not only threatens the overall strength and resiliency of the species, but has also had a negative impact on the NCE and the natural quality of the wilderness character of the Stephen Mather Wilderness in that effects from modern civilization, namely the removal of a keystone species, remain so long as this species is functionally extirpated from the ecosystem. Restoration of this species would therefore restore a significant aspect of the natural processes of ecological systems within the Stephen Mather Wilderness to a state in which they are substantially free from the effects of modern civilization. This restoration is therefore necessary to administer these wilderness areas as wilderness.

OUTSTANDING OPPORTUNITIES FOR SOLITUDE or PRIMITIVE and UNCONFINED RECREATION

Select your answer.

☐ YES ☒ NO

This action is not necessary to preserve opportunities for solitude or primitive and unconfined recreation in the Stephen Mather Wilderness.

OTHER FEATURES OF VALUE

Select your answer.

☒ YES ☐ NO

Grizzly bears themselves represent a unique ethnographic resource in the NCE due to their cultural importance to some Tribes and First Nations whose traditional lands include designated wilderness in the NCE. Given the functional extirpation of grizzly bears in the NCE, this feature of value is degraded under current conditions.

B. Valid Existing Rights

Select your answer.

Is action necessary to satisfy a valid existing right? If so, cite the specific right, terms and conditions, and source.

☐ YES ☒ NO

C. Special Provisions of Wilderness Legislation

Is action necessary to satisfy a special provision in wilderness legislation (i.e., Section 4(d) of the Wilderness Act of 1964 or subsequent wilderness-enabling laws) that requires action? Cite law and section.

☐ YES ☒ NO

The Stephen Mather Wilderness was designated by the Washington Parks Wilderness Act of 1988. There are no Special Provisions in any of the legislation creating this wilderness that would require grizzly bear restoration and monitoring.

D. Requirements of Other Federal Laws

*Not including special provisions found in wilderness-enabling laws, does another Federal law, by itself or as implemented or interpreted through EO, court order, etc., **require** action? Cite law and section.*

☒ YES ☐ NO

Sections 2(c)(1) and 7(a)(1) of the **Endangered Species Act (ESA) of 1973** (16 USC 1531 et seq.), create an affirmative obligation "...that all federal departments and agencies shall seek to conserve endangered and threatened species" of fish, wildlife, and plants. Thus, this obligation under ESA to "...utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered and threatened species" applies to the National Park Service who manage lands within the NCE.

Sec.3(3) of the Endangered Species Act of 1973 provides additional clarity to this affirmative obligation by defining "conserve", "conserving", and "conservation" as using "and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary". "Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation..."

The **National Park Service Organic Act of 1916**, as amended by the **General Authorities Act of 1970**, directs the NPS "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." This Act has been interpreted by NPS through NPS Management Policies 2006: Section 4.4.2.3 states "The Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the Endangered Species Act."

Step 1: Determination – Is Administrative Action Necessary in Wilderness?

Based on the responses and detailed explanations in A through D above, is there a need to proceed to Step 2? If at least one criterion in B through D in Step 1 has been met, or at least one quality of wilderness character is threatened, check the "Yes" box and provide a thorough explanation of the rationale described in A through D. It may also be helpful to describe in this determination how action would be consistent with the public purposes of wilderness or satisfy a specific agency obligation. If none of the criteria have been met, action is NOT necessary. Check the "No" box, explain why the proposed project does not meet the criteria, and stop your analysis.

☒ YES

EXPLAIN BELOW AND COMPLETE STEP 2 OF THE MRAF

☐ NO

STOP – EXPLAIN BELOW AND DO NOT TAKE ACTION

The grizzly bear, indigenous to the NCE and the wildernesses within it, has been functionally extirpated from the NCE and is currently a federally listed threatened and state-listed endangered species. This extirpation not only threatens the overall strength and resiliency of the species, but it also has had a negative impact on the NCE and the wilderness within it, including the “natural” and “other features of value” qualities of the wilderness character. Restoration of this species would restore a significant aspect of the biodiversity within these wildernesses to a state in which they are substantially free from the effects of modern civilization (natural quality of wilderness character) and would enhance the ecological, scientific, historical, and ethnographic values of these wildernesses, in that this action would restore this keystone species to the NCE and these wildernesses. Most high-quality grizzly bear habitat within the NCE is in these designated wildernesses, and in order to recover a population in the NCE under the regulatory guidance of the ESA, grizzly bears would need to be restored to these wildernesses. Because the restoration of grizzly bears is necessary to restore this important aspect of the “natural” and “other features of value” qualities of wilderness character, actions to restore (including releases and subsequent monitoring) the grizzly bear to the Stephen Mather Wilderness are necessary to administer these areas as wilderness. Application of the Wilderness Act (specifically Section 4(b) – requirement to preserve wilderness character through “Natural” and “Other Features of Value” qualities of the Wilderness Act) and Endangered Species Act (Section 7(a)) indicate that action is needed to restore the grizzly bear to the Stephen Mather Wilderness.

Because the NCE grizzly bears are at risk of local extinction, action is needed at this time to 1) Restore grizzly bears to the NCE where they have been functionally extirpated from the ecosystem, 2) Contribute to the restoration of biodiversity of the ecosystem to build ecological resilience and for the benefit and enjoyment of present and future generations of people, 3) Enhance the probability of long-term survival of grizzly bears in the NCE and thereby contribute to overall grizzly bear recovery through redundancy in multiple populations and representation in a variety of habitats, and 4) Support the recovery of the grizzly bear to the point where it can be removed from the Federal List of Endangered and Threatened Wildlife.

Step 2: Determine the Minimum Activity

Other Direction

*Is there “special provisions” language in legislation or other congressional direction that explicitly allows consideration of (but does not require) a prohibited use? (Step 1 has a similar question in Section C, but that question is specific to other legislation requiring action in wilderness; this question is specific to other legislation addressing **consideration of prohibited uses**).*

AND/OR

Has the issue been addressed or prescribed in agency policy, management plans, or legal directive (e.g., treaty, EO, court order, or other binding agreement with federal, state, or local agencies or authorities)?

☒ YES

DESCRIBE OTHER DIRECTION

☐ NO

SKIP TO “UNCONTROLLABLE TIMING REQUIREMENTS” BELOW

The grizzly bear was listed under the ESA as a threatened species on July 28, 1975, and the Grizzly Bear Recovery Plan was established in 1982 and revised in 1993, designating the NCE as a grizzly bear recovery zone. The NCE Grizzly Bear Recovery Plan Supplement was signed into effect June 23, 1997, and among the specified recovery criteria is that a grizzly bear population “is well distributed throughout the ecosystem (based on Bear Management Unit occupancy by females with young)” (USFWS 1997). The North Cascades Grizzly Bear Recovery Zone is divided into 42 BMUs, only 15 of which have a high amount (>70%) of core area, and of those, 14 are primarily within wilderness.

Section 4(b) of the Wilderness Act states that “Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use”. Guidance for the National Park Service, Department of Interior is stated in NPS Management Policies 2006 (Section 4.4.2.2), which directs the NPS to take action to restore native plant and animal populations that “have been extirpated by past human caused actions”, whenever all of the following criteria are met:

- 1) “Adequate habitat to support the species either exists or can reasonably be restored in the park, and if necessary also on adjacent public lands and waters; once a natural population level is achieved, the population can be self-perpetuating”;
- 2) The species does not, based on an effective management plan, pose a serious threat to the safety of people in parks, park resources, or persons or property within or outside park boundaries;
- 3) The genetic type used in restoration most nearly approximates the extirpated genetic type”;
- 4) The species disappeared, or was substantially diminished, as a direct or indirect result of human induced change to the species population or to the ecosystem”;
- 5) Potential impacts upon park management and use have been carefully considered.”

When restoring these species, NPS Management Policies 2006 (Section 4.1.5) further provide “The Service will use the best available technology, within available resources, to restore the biological and physical components of these systems, accelerating both their recovery and the

recovery of landscape and biological community structure and function”. NPS Management Policies 2006 (Section 4.4.2.3) also direct NPS to intervene to manage individuals or populations to protect rare, threatened, or endangered species: “The Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the Endangered Species Act. The Service will fully meet its obligations under the NPS Organic Act and the Endangered Species Act to both proactively conserve listed species and prevent detrimental effects on these species....To meet these obligations, it is NPS policy to cooperate with the FWS to:

- 1) ensure NPS actions comply with the ESA;
- 2) undertake active management programs to inventory, monitor, restore, and maintain listed species habitats;
- 3) manage designated critical habitat, essential habitat, and recovery areas to maintain and enhance their value for the recovery of threatened and endangered species;
- 4) cooperate with other agencies to ensure that delineation of critical habitat, essential habitat, and/or recovery areas on park lands provides needed conservation benefits to recovery efforts being conducted by all the participating agencies;
- 5) participate in the recovery planning process, including the provision of members on recovery teams and recovery implementation teams where appropriate;
- 6) cooperate with other agencies, states, and private entities to promote candidate conservation agreements aimed at precluding the need to list species; and
- 7) conduct actions and allocate funding to address endangered, threatened, proposed, and candidate species.”

The Wilderness Management Plan (1989) for the Stephen Mather Wilderness establishes standards for minimal tool use, stating, “Non power tools will be preferred. The Wilderness District Ranger will have final approval for the use of power tools...Any use of power tools will be limited as far as possible to before the 4th of July and after Labor Day. All power tools will use a modified muffler that reduces decibel level...Power tools will be limited to chain saws, brushers, rock drills, chain saw winches, and explosives...Aircraft may only be used if stock use is not permitted on trails, trail conditions prevent stock use, or it is impractical to use stock and there is no other practical way to accomplish the work. Aircraft use will be confined to Monday through Thursday and as much as possible to before the 4th of July and after Memorial Day.”

NPS Guidelines for Ecological Intervention in Wilderness (2022) incorporated in Reference Manual 41 provides a framework to assist NPS unit managers in applying the provisions of NPS management policy and other guidance when determining whether or not ecological intervention is or is not favored in wilderness.

Uncontrollable Timing Requirements

What, if any, are the considerations that would dictate timing of the action?

It is necessary to release grizzly bears during the months of early summer to early fall while there is an abundance of bear foods available and prior to the winter hibernation period. It is also necessary to translocate 3-7 bears per year for 5-10 years in order to build and maintain reproductive capacity of a founder population that can reach a self-sustaining trajectory given the life history characteristics of grizzly bears. Once a bear is captured for translocation, it must be transported and released immediately, in order to promote bear animal welfare practices.

Workflow Components

What are the distinct components or phases of the action?

Component 1	Transportation of personnel from staging area to release site
Component 2	Transportation of grizzly bear in culvert trap to release site
Component 3	Release of grizzly bear
Component 4	Removal of empty culvert trap from release site
Component 5	Removal of personnel from release site
Component 6	Monitoring of grizzly bear movement, survival, and resource use
Component 7	Transport of personnel to monitor bear reproduction
Component 8	Transport of personnel to monitor bear biology (diet, etc.)
Component 9	Transport of personnel to retrieve collar and/or carcass
Component 10	Removal of radio-collars and/or carcasses
Component 11	Condition of site after project

Feasibility of Alternatives

Only include feasible alternatives in this section. Some alternatives that are not feasible may warrant documentation in the “Alternatives Considered but Dismissed” section to provide a brief description and explanation of why it was dismissed and not considered in detail.

Possible reasons for dismissal include alternatives that are [impossible](#), have [unacceptable impacts](#), are [unsafe](#), are proven [ineffective](#), have [excessive costs](#), or whose [timing](#) would cause degradation to wilderness character.

The alternatives should also be reasonable. For example, there is no need to include helicopters in an alternative for equipment transport when that equipment can be easily carried by people or pack stock along a maintained trail.

Refer to the [MRAF instructions](#) regarding [alternatives](#) and the effects to each of the comparison criteria.

Step 2: Alternatives

Alternative 1

No action

Component Methods

How will each of the components of the action be performed under this alternative?

Component	Workflow Components	Component Methods for this Alternative
1	NCE Grizzly Bear Recovery Plan Supplement	Implement existing guidelines for grizzly bear habitat management

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken? Provide a complete narrative description of the Component Methods identified above.

Under this alternative, existing management practices would be followed. Under the no-action alternative, options for grizzly bear restoration would be limited and rely primarily on natural recovery. Current management actions would continue, focused on improved sanitation, motorized access management, outreach, and educational programs to provide information about grizzly bears and grizzly bear recovery to the public, and research and monitoring to determine grizzly bear presence, distribution, habitat, and home ranges. These actions would occur both inside and outside of wilderness and would continue to be guided by the NCE Grizzly Bear Recovery Plan Supplement (USFWS 1997).

Wilderness Character

Component Number	For each component number, indicate the impact the method for this alternative will have on each of the five qualities of Wilderness: Positive = P, Negative = N, No Effect = 0 <i>Describe in detail the impacts to each of the five qualities in the narrative section below</i>	Untrammeled	Undeveloped	Natural	Solitude or Primitive and Unconfined	Other Features of Value
1	Implement existing guidelines for grizzly bear habitat management	0	N	N	N	N

What is the effect of each Component Method on the qualities of wilderness character?
What [mitigation measures](#) will be taken? Include cumulative impacts in the explanation.

UNTRAMMELED: Explain the intensity of the action that would intentionally control, manipulate, or hinder the conditions or processes of ecological systems:

By not taking action to reintroduce the grizzly bear to the NCE, the NPS would be passively managing the wilderness in hopes that through which and in which these animals might travel and establish home ranges. The agencies would not be manipulating a wildlife population and would continue to document the extirpation of this indigenous species in the Stephen Mather Wilderness.

UNDEVELOPED: Explain the effects to this quality in terms of how “the imprint of man’s work [would] remain substantially unnoticeable,” and how wilderness will continue to be in contrast with other areas of “growing mechanization”:

In order to continue to assess the presence or absence of grizzly bears in the NCE toward meeting the recovery criteria in the NCE Grizzly Bear Recovery Plan Supplement (USFWS 1997), the agencies would need to continuously implement surveys for grizzly bears using anthropogenic devices (cameras, hair snares) across the entire recovery area. This action would degrade the undeveloped quality of wilderness due to equipment installations. The number of devices required has not been assessed because monitoring alone does not take action to recover the population and thus does not meet the need of the NCE Grizzly Bear Restoration Plan/EIS.

NATURAL: Explain the effects to this quality in terms of protection, degradation, or restoration of natural conditions:

Failing to restore a functionally extirpated, federally-listed threatened species would have a significant, long-term, adverse impact on the naturalness of the Stephen Mather Wilderness. Grizzly bears were listed under the ESA and still present in the NCE when the Stephen Mather Wilderness was designated and their population extirpation represents a degradation of the natural quality of wilderness character through time.

OUTSTANDING OPPORTUNITIES FOR SOLITUDE OR PRIMITIVE and UNCONFINED RECREATION: Explain how opportunities for visitors to experience solitude or a primitive and unconfined type of recreation will be protected or degraded. As appropriate, describe solitude, primitive recreation, and unconfined recreation separately:

Visitors recreating in the Stephen Mather Wilderness would continue to experience these areas without sharing the wilderness with grizzly bears. This paradigm would have a long-term adverse impact on opportunities for primitive and unconfined recreation for visitors to the wilderness.

OTHER FEATURES OF VALUE: Explain any effects to features of scientific, educational, scenic, or historical value that are not accounted for in the above qualities, including cultural and paleontological resources that are integral to wilderness character:

There are currently limited opportunities to enhance scientific and education values around grizzly bears in the NCE because there are no bears from which to collect the data needed to understand their ecological place in the ecosystem. Grizzly bears also represent an ethnographic resource important to some Tribes and First Nations, which is currently a degraded quality in the Stephen Mather Wilderness.

Alternative 2

Maximize Efficiency, Animal Welfare, and Data Collection: Transplant bears to release sites with staff assistance via helicopter; post-monitoring activities and collar retrieval via foot and aircraft; mortalities retrieved via helicopter

Component Methods

How will each of the components of the action be performed under this alternative?

Component	Workflow Components	Component Methods for this Alternative
1	Transportation of personnel from staging area to release site	Personnel transported via helicopter (1 round trip with landing/bear)
2	Transportation of grizzly bear in culvert trap to release site	Bear transported by helicopter (1 sling load/bear).
3	Release of grizzly bear	Release grizzly bear; open culvert trap
4	Removal of empty culvert trap from release site	Trap transported by helicopter (1 sling load/bear)
5	Removal of personnel from release site	Personnel transported via helicopter (1 round trip with landing/bear)
6	Monitoring of grizzly bear movement, survival, and resource use	Deploy radio-collars
7	Transport of personnel to monitor bear reproduction	Fixed wing aircraft (2 times/year for duration collars are operable; regardless of number of bears released)
8	Transport of personnel to monitor bear biology (diet, etc.)	Reconnaissance and surveys via foot (regardless of number of bears released)
9	Transport of personnel to retrieve collar and/or carcass	Personnel transported via foot as safe; helicopter when necessary to access site (potentially 1 round trip with landing/collar)
10	Removal of radio-collars and/or carcasses	Collect dropped radio-collars, samples from carcass, or entire carcass
11	Condition of site after project	Ample information to ensure all objectives are met

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken? Provide a complete narrative description of the Component Methods identified above.

In this alternative, all grizzly bears released within the NCE would be transported to identified release sites via truck, boat, and/or helicopter. Individual grizzly bears would be live-trapped in other ecosystems that are ecologically similar to the NCE. The trapped bears would then be anesthetized, measured, marked, and fitted with Global Positioning System (GPS) collars and transported in a culvert trap towed by vehicle to staging areas within the NCE. Staging areas would be located outside wilderness in previously disturbed areas close to the identified release site and large enough for (a) the safe landing of a helicopter, (b) parking for a fuel truck, and (c)

any other grizzly bear processing needs. Once at the staging area, personnel (including staff with animal handling/veterinary skills training) would be picked up and transported to the release site via helicopter, requiring one round trip of a helicopter flight and one landing at the release site. The helicopter would then return to the staging area to pick up the culvert trap, with grizzly bear inside, via long line, and would transport the trap and bear back to the release site, leaving the site once the culvert trap was detached by personnel onsite (another round-trip helicopter flight). Personnel onsite would then open the trap to release the bear, in such a way as to ensure personnel safety, and would remain onsite at a safe distance to ensure the bear successfully left the trap. Following successful release, the helicopter would (1) return to the release site to pick up the empty culvert trap, via long line, and transport it back to the staging area (another round trip helicopter flight), and would then (2) return to the site to pick up the personnel as well (one last round trip with an aircraft landing). All flights would occur between the staging area and release site.

Helicopters would make up to four round trips per grizzly bear and would require four landings in wilderness, necessary for the release of each grizzly bear and drop-off and retrieval of staff and the culvert trap. Each release could take up to eight hours over the course of one day; however, helicopter flight time over designated wilderness areas would vary (estimated at 0.1-4.6 hours of flight time over wilderness per release) depending on the location of the release site and corresponding staging area. All operations would be conducted during daylight hours. Under all alternatives, capture and release activities would take place between early summer and early fall, depending on the capture and release site(s) selected and availability of natural bear foods during that particular year. Considering the sensitivity of these release activities, the NPS could also implement potential temporary local closures (up to a few days) during releases on a site-specific basis.

Following the initial release of grizzly bears into the NCE, the NPS would conduct annual monitoring activities to assess the success of restoration activities – particularly track reproduction, survival, and behavior (such as diet and genetic monitoring) – and adaptively manage for future releases. While much of the monitoring work would occur via satellite (i.e. remotely), this alternative would include two annual overflights (without landings) via fixed wing aircraft to monitor reproduction. These flights would occur in the spring and fall and would target areas with known female grizzly bears to try to visually identify if offspring/cubs are present. Onsite monitoring would also occur periodically via foot to study diet (sample scat or monitor vegetation) and genetics (obtain hair samples) within known home ranges.

As described above, collars would be attached to all released bears prior to transporting bears into wilderness. Collars are designed to fall off after three to four years of use or could be remotely triggered to fall off if necessary. Under this alternative, staff would also retrieve lost collars via foot in locations where it is acceptably safe to do so. Helicopters would be used to retrieve collars in areas that pose an unacceptable safety risk to access by foot.

Should mortalities occur during years of project implementation, reconnaissance would occur via helicopter (one round-trip flight with landing) in order to transport personnel to site, complete an investigation as to the cause of death, retrieve important remains, and fly back. It is possible

that personnel would determine that a more holistic examination is necessary, which would require laboratory examination of potentially the full remains. In these situations, an additional flight could occur for bears that are too heavy to lift within an internal helicopter load.

Because of these extensive monitoring procedures, NPS, FWS, USFS, and WDFW staff would likely have ample information to adaptively manage grizzly bear restoration and respond to any issues that arise in release efforts in order to ensure the greatest success for restoration. These monitoring procedures would allow staff to estimate survival rate, the number of grizzly bears that establish a home range, and the number of reproducing females in order to determine if the restored grizzly bear population is capable of surviving and reproducing by natural means. They would also be able to detect grizzly bears in the NCE in order to determine grizzly bear density and distribution in the ecosystem, and would furthermore expand scientific understanding regarding grizzly bear habitat use, movement, reproduction and survival.

Wilderness Character

Component Number	For each component number, indicate the impact the method for this alternative will have on each of the five qualities of Wilderness: Positive = P, Negative = N, No Effect = 0 <i>Describe in detail the impacts to each of the five qualities in the narrative section below</i>	Untrammeled	Undeveloped	Natural	Solitude or Primitive and Unconfined	Other Features of Value
1	Personnel transported via helicopter (1 round trip with landing/bear)	0	N	0	N	0
2	Bear transported by helicopter (1 sling load/bear)	0	N	0	N	0
3	Release grizzly bear; open culvert trap	N	0	P	P	P
4	Trap transported by helicopter (1 sling load/bear)	0	N	0	N	0
5	Personnel transported via helicopter (1 round trip with landing/bear)	0	N	0	N	0
6	Deploy radio-collars	0	N	0	0	0
7	Fixed wing aircraft (2 times/year for duration collars are operable; regardless of number of bears released)	0	0	0	N	P
8	Reconnaissance and surveys via foot (regardless of number of bears released)	0	0	0	N	P
9	Personnel transported via foot as safe; helicopter when necessary to access site (potentially 1 round trip with landing/collar)	0	N	0	N	0
10	Collect dropped radio-collars, samples from carcass, or entire carcass	0	P	P	0	P
11	Ample information to ensure all objectives are met	0	P	P	P	P

What is the effect of each Component Method on the qualities of wilderness character?
What [mitigation measures](#) will be taken? Include cumulative impacts in the explanation.

UNTRAMMELED: Explain the intensity of the action that would intentionally control, manipulate, or hinder the conditions or processes of ecological systems:

By reintroducing the grizzly bear to the NCE, the NPS would be actively managing the wilderness through which and in which these animals are expected to travel and establish home

ranges. The translocation of bears is a manipulation of a wildlife population, with the intent of preventing the complete extirpation of this indigenous species in the Stephen Mather Wilderness where bears may be released, as well as other wilderness areas in the NCE where translocated bears and their offspring may travel and establish home ranges.

UNDEVELOPED: Explain the effects to this quality in terms of how “the imprint of man’s work [would] remain substantially unnoticeable,” and how wilderness will continue to be in contrast with other areas of “growing mechanization”:

Impacts listed to the undeveloped quality of wilderness character are from the use of aircraft for transportation, and the presence of radio-collars and animal tags. The use of helicopters and aircraft landings are considered development within wilderness. Helicopter transport (4 flights per released bear (144 round trip flights); plus the likely few flights needed to retrieve collars and mortalities), helicopter landings (4 landings per released bear); plus the likely few flights needed to retrieve collars would all have short-term negative impacts on the undeveloped quality of wilderness character within each wilderness. Each released grizzly bear would carry a radio-collar and ear tag, for a total of up to 72 devices if all 36 bears were released over 5-10 years, though not all devices would be on the landscape simultaneously. Ear tags would be retained for the life of a bear and removed from the landscape if a carcass was recovered. Radio-collars would be set to detach on a timed schedule or could be remotely-triggered to detach, and would be recovered by agency personnel when safe to do so. Removal of detached radio-collar devices and ear tags would be a benefit to undeveloped character. Not all actions would occur within wilderness as actions are related to individual bears; rather impacts would occur respective to where individual bears are released and home ranges are established.

NATURAL: Explain the effects to this quality in terms of protection, degradation, or restoration of natural conditions:

In ensuring successful restoration of a functionally extirpated, federally-listed threatened species through transplants, monitoring, and adaptive management, this action would have a moderate, long-term, beneficial impact on the naturalness of the Stephen Mather Wilderness because it would restore the processes and biodiversity of these wilderness ecosystems by completing the native carnivore guild within these wildernesses, which would have positive cascading effects on other species present. These activities would result in the restoration of a federally threatened species and thus the natural quality of wilderness character within each of these wilderness areas. Some negative short-term impacts would occur to the natural quality of wilderness character, such as removal of dead bears. The removal of individual dead grizzly bears would remove a potential food source for scavengers and eliminate natural decay processes (such as nutrient deposition), but the benefit of removing carcasses to determine cause of death could contribute important information toward improving overall restoration success. Removal of detached radio-collar devices would be a benefit to natural character due to the possibility of environmental contamination if left indefinitely on the landscape.

OUTSTANDING OPPORTUNITIES FOR SOLITUDE OR PRIMITIVE and UNCONFINED RECREATION: Explain how opportunities for visitors to experience solitude or a primitive and unconfined type of recreation will be protected or degraded. As appropriate, describe solitude, primitive recreation, and unconfined recreation separately:

Actual release activities have the potential to impact summer visitors to the wilderness areas as sounds from transportation to release sites and actions associated with releases will likely occur within wilderness which would temporarily degrade the opportunities for solitude in the Stephen Mather Wilderness. Similarly, seeing/hearing fixed-wing aircraft associated monitoring would have a short-term negative impact on visitors' opportunities for solitude in the wilderness. Temporary closures may also occur during releases which could briefly limit access to specific locations within wilderness.

At the same time, knowing grizzly bears have been restored to the wilderness, having the slim, though real, chance to see a grizzly bear in the wild and in its native habitat, and having enhanced opportunities to learn about grizzly bear restoration would have a long-term beneficial impact on opportunities for primitive and unconfined recreation for visitors to the wilderness.

OTHER FEATURES OF VALUE: Explain any effects to features of scientific, educational, scenic, or historical value that are not accounted for in the above qualities, including cultural and paleontological resources that are integral to wilderness character:

Grizzly bear restoration (through reintroduction, monitoring, adaptive management) would benefit a feature with ecological, scientific, educational, and historic value. Historical value, and specifically grizzly bears as an ethnographic resource important to some Tribes and First Nations, would be restored to the ecosystem, representing a beneficial impact.

Alternative 3:

Transplant bears to release sites with minimal staff assistance via truck, boat, or helicopter; post-monitoring activities via foot and aircraft; collar retrieval primarily via foot; mortalities retrieved via helicopter only following on-site reconnaissance.

Component Methods

How will each of the components of the action be performed under this alternative?

Component	Workflow Components	Component Methods for this Alternative
1	Transportation of personnel from staging area to release site	Personnel travel via foot to assist with removal of culvert trap
2	Transportation of grizzly bear in culvert trap to release site	Bear transported by helicopter (1 sling load/bear).
3	Release of grizzly bear	Release grizzly bear; open culvert trap
4	Removal of empty culvert trap from release site	Trap transported by helicopter (1 sling load/bear)
5	Removal of personnel from release site	Personnel travel via foot to exit the release area
6	Monitoring of grizzly bear movement, survival, and resource use	Deploy radio-collars
7	Transport of personnel to monitor bear reproduction	Reconnaissance and surveys via fixed-wing aircraft (2 flights, regardless of number of bears released)
8	Transport of personnel to monitor bear biology	Reconnaissance and surveys via foot (regardless of number of bears released)
9	Transport of personnel to retrieve collars	Personnel transported via foot to retrieve dropped collars
10	Removal of radio-collars and/or carcasses	Collect dropped radio-collars, samples from carcass, or entire carcass
11	Condition of site after project	Ample information to ensure all objectives are met

Description of the Alternative

What are the details of this alternative? When, where, and how will the action occur?

What mitigation measures will be taken? Provide a complete narrative description of the Component Methods identified above.

In this alternative, grizzly bears released within the NCE would be transported to identified release sites either via truck, boat, or a combination of truck, boat, and helicopter. Like alternative 2, individual grizzly bears would be live-trapped in other ecosystems that are ecologically similar to the NCE. The trapped bears would then be anesthetized, measured, marked, and fitted with Global Positioning System (GPS) collars and transported in a culvert trap towed by vehicle to either a release site that is accessible via road (very few of these locations exist) or a staging area within the NCE.

For release sites that are accessible via road, no prohibited uses would occur within designated wilderness. However, for release sites that are not accessible via road (most of the likely suitable release locations), releases would occur via helicopter from established staging areas that meet the criteria outlined in alternative 2. Initially, releases would occur similar to those in alternative 2 – except with only two flights and landings per release to facilitate the release. Personnel would need to hike to the site (as close to the timed release as possible) to release the bear once the helicopter delivers the culvert trap and then to reattach the empty culvert trap so the helicopter can return it to the staging area. In this scenario, additional staff with animal handling/veterinary training would be needed in order to have qualified personnel tending to the needs of a bear both at the staging area and at the release site. Continuity of animal care by the same staff member will not be possible under this scenario because personnel cannot simultaneously attend to a bear at the staging site and hike up to several days to a release site. For the purposes of assessing impacts, helicopters would initially make up to two round trips per grizzly bear and would require two landings in wilderness. Each release could take up to eight hours over the course of one day; however, helicopter flight time over designated wilderness areas would vary (estimated at 0.05-2.3 hours of flight time over wilderness per release) depending on the location of the release site and corresponding staging area. All operations would be conducted during daylight hours. Under all alternatives, capture and release activities would take place between early summer and early fall, depending on the capture and release site(s) selected and availability of natural bear foods during that particular year. Considering the sensitivity of these release activities, the NPS could also implement potential temporary local closures (up to a few days) during releases on a site-specific basis. Following the initial release of grizzly bears into the NCE, the NPS would conduct annual monitoring activities to assess the success of restoration activities similar to those outlined in alternative 2. While much of the monitoring work would occur via satellite (i.e. remotely), this alternative would include two annual overflights (no landings) via fixed wing aircraft to monitor reproduction. These flights would occur in the spring and fall and would target areas with known female grizzly bears to try to visually identify if offspring/cubs are present. Onsite monitoring would also occur periodically via foot to study diet (sample scat or monitor vegetation) and genetics (obtain hair samples) within known home ranges. Collars would be attached to all released bears and are expected to fall off after three to four years of use. Under this alternative, staff would retrieve lost collars via foot whenever feasible, but could retrieve collars via helicopter when in extremely remote/hazardous areas. Should mortalities occur during years of project implementation, reconnaissance would occur via staff traveling on foot to complete an investigation as to the cause of death. It is possible that personnel would determine that a more holistic examination is necessary, which would require laboratory examination of potentially the full remains. In these

situations, a helicopter flight would occur to transport the carcass back to an established helipad outside of wilderness. Because of these extensive monitoring procedures, NPS, FWS, USFS, and WDFW staff would likely have ample information to adaptively manage grizzly bear restoration and respond to any issues that arise in release efforts. These monitoring procedures would allow staff to estimate survival rate, the number of grizzly bears that establish a home range, and the number of reproducing females in order to determine if the restored grizzly bear population is capable of surviving and reproducing by natural means. They would also be able to detect grizzly bears in the NCE in order to determine grizzly bear density and distribution in the ecosystem, and would furthermore expand scientific understanding regarding grizzly bear habitat use, movement, reproduction and survival. This alternative may diminish the ability of managers to determine the cause of death for deceased bears because the travel time via foot may take several days, during which time the carcass is likely to be scavenged or decompose.

Wilderness Character

Component Number	For each component number, indicate the impact the method for this alternative will have on each of the five qualities of Wilderness: Positive = P, Negative = N, No Effect = 0 <i>Describe in detail the impacts to each of the five qualities in the narrative section below</i>	Untrammeled	Undeveloped	Natural	Solitude or Primitive and Unconfined	Other Features of Value
1	Personnel travel via foot to assist with release of bear from culvert trap	0	0	0	N	0
2	Bear transported by helicopter (1 sling load/bear).	0	N	0	N	0
3	Release grizzly bear; open culvert trap	N	0	P	P	P
4	Trap transported by helicopter (1 sling load/bear)	0	N	0	N	0
5	Personnel travel via foot to exit the release area	0	0	0	N	0
6	Deploy radio-collars	0	N	0	0	0
7	Reconnaissance and surveys via fixed-wing aircraft (2 flights, regardless of number of bears released)	0	0	0	N	P
8	Reconnaissance and surveys via foot (regardless of number of bears released)	0	0	0	N	P
9	Personnel transported via foot to retrieve dropped collars	0	0	0	N	0
10	Collect dropped radio-collars, samples from carcass, or entire carcass	0	P	P	0	P
11	Ample information to ensure all objectives are met	0	0	N	N	P

What is the effect of each Component Method on the qualities of wilderness character?
What mitigation measures will be taken? Include cumulative impacts in the explanation.

UNTRAMMELED: Explain the intensity of the action that would intentionally control, manipulate, or hinder the conditions or processes of ecological systems:

By reintroducing the grizzly bear to the NCE, the NPS would be actively managing the wilderness through which and in which these animals are expected to travel and establish home ranges. The translocation of bears is a manipulation of a wildlife population, with the intent of

preventing the extirpation of this indigenous species in the Stephen Mather Wilderness where bears may be released, as well as other wilderness areas in the NCE where translocated bears and their offspring may travel and establish home ranges.

UNDEVELOPED: Explain the effects to this quality in terms of how “the imprint of man’s work [would] remain substantially unnoticeable,” and how wilderness will continue to be in contrast with other areas of “growing mechanization”:

The use of helicopters, aircraft landings, and fixed wing flights, as well as the GPS collars, are all considered development within wilderness. Although similar types of impacts would occur as in alternative 2 (helicopter flights, aircraft landings, and fixed wing flights), the number and duration of impacts would be less as 1) some bears may be released via road in non-wilderness, requiring no prohibited uses within wilderness, 2) personnel would eventually not be transported to and from releases in wilderness, cutting in half the number of flights and flight hours and eliminating aircraft landings associated with releases and retrieval of mortalities, 3) collars would be retrieved via foot, and 4) investigation of dead bears would be done on foot. As with alternative 2, not all actions would occur within wilderness as actions are related to individual bears. Impacts instead would occur respective to where individual bears are released and home ranges are established. Removal of radio-collar devices and ear tags would be a benefit to undeveloped quality; however, under this alternative, it is more likely that some radio-collars and ear tags cannot be safely retrieved.

NATURAL: Explain the effects to this quality in terms of protection, degradation, or restoration of natural conditions:

In ensuring successful restoration of a functionally extirpated, federally-listed threatened species through transplants, monitoring, and adaptive management, this action would have a moderate, long-term, beneficial impact on the naturalness of the Stephen Mather Wilderness because it would restore the processes and biodiversity of these wilderness ecosystems by completing the native carnivore guild within these wildernesses, which would have positive cascading effects on other species present. These activities would result in the restoration of a federally threatened species and thus the natural quality of wilderness character within each of these wilderness areas.

Some negative short-term impacts would occur, such as removal of dead bears, to the natural quality of wilderness character. The removal of individual dead grizzly bears would remove a potential food source for scavengers and eliminate natural decay processes (such as nutrient deposition), but the benefit of removing carcasses to determine cause of death could contribute important information toward improving overall restoration success. Removal of radio-collar devices and ear tags would be a benefit to natural character due to the possibility of environmental contamination if left indefinitely on the landscape; however, under this alternative, it is more likely that some radio-collars and ear tags cannot be safely retrieved.

OUTSTANDING OPPORTUNITIES FOR SOLITUDE OR PRIMITIVE and UNCONFINED RECREATION: Explain how opportunities for visitors to experience solitude or a primitive and unconfined type of recreation will be protected or degraded. As appropriate, describe solitude, primitive recreation, and unconfined recreation separately:

Actual release activities have the potential to impact summer visitors to the wilderness areas as sounds from transportation to release sites and actions associated with releases will likely occur within wilderness which would temporarily degrade the opportunities for solitude in the Stephen Mather Wilderness. Because fewer flights/flight hours are anticipated under this alternative, it is assumed these impacts to solitude would be slightly less than those under alternative 2. Temporary closures may also occur during releases (a few days at most), particularly if releases occur on or near roads which could briefly limit access to specific locations within wilderness. Similarly, seeing personnel more frequently in the wilderness would have a short-term negative impact on visitors' opportunities for solitude in the wilderness.

At the same time, knowing grizzly bears have been restored to the wilderness, having the slim, though real, chance to see a grizzly bear in the wild and in its native habitat, and having enhanced opportunities to learn about grizzly bear restoration would have a long-term beneficial impact on opportunities for primitive and unconfined recreation for both visitors to the wilderness and non-visitors alike. Under this alternative, it is likely that less information will be available to educate the public on biology and resource use of the reintroduced bears.

OTHER FEATURES OF VALUE: Explain any effects to features of scientific, educational, scenic, or historical value that are not accounted for in the above qualities, including cultural and paleontological resources that are integral to wilderness character:

The monitoring activities that would accompany grizzly bear restoration (monitoring reproduction and behavior; studying mortalities; adaptively managing restoration efforts to ensure successful restoration) would inform future restoration efforts of native species – a long-term benefit to scientific understanding of these processes. This information could also be used to enhance education in and around the wilderness, a beneficial impact. Grizzly bears being released benefits ethnographic value because some Tribes and First Nations consider this species as culturally significant. The time to investigate carcasses on foot introduces time for scavenging and decomposition, which decreases the likelihood that an intact carcass can be found and necropsied. This delay also decreases the likelihood that any bear parts would be available for distribution to Tribes and First Nations.

Step 2: Alternatives Considered but Dismissed

What alternatives were considered but dismissed? [Why were they dismissed?](#)

[Explain:](#)

Complete All Releases via Road: As discussed in Step 1, Release areas would represent high quality grizzly bear habitat, while the release sites would be based on selected habitat criteria, connectivity to other areas, and the need to have grizzly bears in close proximity to one another to facilitate interaction and ultimately breeding. Most release sites that meet these criteria in the NCE are located within designated wilderness and are, by nature, far from most roads within the NCE. Potential suitable release sites for grizzly bears outside of wilderness areas are not numerous enough to sustain the reintroduction of 25-36 grizzly bears that are considered within the alternatives of the plan/EIS. Under those alternatives, grizzly bears would be released in high quality grizzly bear habitat which by definition excludes areas within close proximity to a road or campground.

No Personnel Present for Releases: Personnel, including at least one team member with basic veterinary training, will be needed to monitor the grizzly bear's exit from the trap and its well-being after its many hours in the culvert trap (in other words, ensure that the grizzly bear was successfully transplanted). While it is planned that the trap will be opened remotely (either from the ground or from the air), the alternative to staff onsite would require the presence of a helicopter hovering overhead, waiting for the bear to depart, which would most likely prolong if not prevent a bear's exit. Any culvert trap door malfunctions on the ground will need to be dealt with in short order to ensure the bear's safety and timely exit.

Exclude the Use of Radio-collars: In order to determine if grizzly bears remain alive and in the NCE after release, what resources grizzly bears are utilizing, and when grizzly bears may be approaching developed areas and could come into conflict with humans, GPS radio-collars must be used and will travel with bears in and out of wilderness. Alternatives such as having staff continually monitor each bear on foot is not feasible due to the inability of humans to locate, keep up with, and observe several (or more) bears on a daily basis from Spring through Fall, over potentially vast, off-trail, rugged, heavily vegetated areas of the ecosystem. Safety would also be an issue, as crews would be intentionally approaching grizzly bears on a continuous basis. Other autonomous technology, such as trail cameras and hair snag devices at the number required to track basic movements require a greater number of installations in wilderness, and more human activity to maintain the devices, while not providing sufficient data to inform adaptive management actions such as proactive conflict mitigation when bears may be approaching developed areas.

Complete all Reproductive Monitoring via Foot: In order to determine whether or not this proposed restoration is successful, this project must be able to confirm successful reproduction of translocated bears. Grizzly bears are wide-ranging animals who typically avoid human activity when and where possible. They can travel many miles in a day over steep and rugged terrain. While satellite collars provide current location data, the ability of ground crews to locate, keep

up with, and observe several (or more) bears with offspring during the spring and fall over potentially vast, off-trail, rugged, heavily vegetated areas of the ecosystem would be prohibitive. Safety would also be an issue, as crews would be intentionally approaching a potentially reproductive female grizzly bear at close range (given limited visibility across the terrain, particularly in spring when grizzly bears make a lot of use of riparian and avalanche chute habitats) in order to count her cubs. For these reasons, this alternative was considered but dismissed from further analysis.

Complete all Reproductive Monitoring via Stock: In addition to those reasons mentioned above, much of the terrain across the NCE is inaccessible to stock. While bears and other wildlife do use human trails, most of their habitat use can be expected to be in trail-less areas that are not reachable by stock. In addition, while grizzly bear attacks on horses/stock are exceedingly rare, the responses of horses to these animals adds a component of risk. Finding a grizzly bear remaining relatively stationary in an area accessible to horses might be possible some of the time, but this still runs the risk of surprise encounters with the study animal, causing unneeded energetic stress to both the female bear and any offspring, and places the crew and stock in unnecessary danger.

Abandon Collars in Place/Do Not Retrieve: Collars are expected to fall off grizzly bears after three to four years, at which time they will fall to the ground wherever the bear is located at the time. Given the habitat that bears prefer, this will likely be in a remote area across rugged terrain that may not be accessible to humans via foot. While collars could reasonably be left in place, this alternative was dismissed for two reasons: 1) leaving collars in place would equate to a long-term impact to the undeveloped quality of wilderness character whereas retrieval could require, at worst, a short/temporary incursion into wilderness, and 2) satellite collars operate off lithium-ion batteries which could leach heavy metals into the soil wherever abandoned.

Step 2: Determination – What is the Minimum Activity?

Refer to the [MRAF instructions](#) before identifying the selected alternative and explaining the rationale for its selection.

Selected Alternative

Maximize Efficiency, Animal Welfare, and Data Collection: Transplant bears to release sites with staff assistance via helicopter; post-monitoring activities and collar retrieval via foot and aircraft; mortalities retrieved via helicopter.

Explain rationale for selection, including a comparison of the selected alternative with other alternatives:

Under Alternative 1 (no action), the objectives of the NCE Grizzly Bear Restoration Plan/EIS and NCE Grizzly Bear Recovery Plan Supplement (USFWS 1997) would not be met and the natural and other features of value qualities of the Stephen Mather Wilderness would continue to be degraded. When comparing the action alternatives considered above, the planning staff for this project noted that almost all beneficial impacts to wilderness character identified in this MRAF would have moderate to significant beneficial impacts on wilderness character that would last in perpetuity; whereas all adverse impacts to wilderness character would be mostly transient and short-term (limited to the number of years of implementation), and in some cases, very unlikely to occur.

In assessing the two action alternatives, it appears from the assessment that Alternative 2 would have more impacts on wilderness character than Alternative 3. However, most impacts were similar between the two alternatives. The difference between the two alternatives in terms of wilderness character is because Alternative 3 results in a reduction of helicopter time over wilderness (which is relatively short in duration), but Alternative 3 then requires multiple days per release of staff presence in the wilderness which reduces the quality of solitude. Under Alternative 3, releases from road-accessible locations could result in an additional type of impact to the opportunities for solitude quality of wilderness character - from potentially closing an area (for 2-3 days) around the release of a grizzly bear closer to human activity areas. If this should occur though, that specific release would not be associated with helicopter flights which impact both the undeveloped and solitude qualities of wilderness character. While Alternative 2 includes transport of personnel by helicopter, it greatly reduces the duration of impacts to solitude quality, as compared to Alternative 3 which would require days of staff presence in the wilderness.

While Other Features of Value includes an array of ecological, scientific, educational and cultural values, it should be noted that Alternative 3 may diminish scientific and ethnographic values more than Alternative 2 due to the time needed and uncertain success rate for staff to locate females to assess reproduction and to locate and recover radio collars and bear carcasses on foot. These scientific data are critical to informing recovery goals for the species, and thus represent the minimum tool for establishing restoration of natural quality. Failure to

recover collars and/or carcasses would result in anthropogenic items being abandoned in wilderness for perpetuity, degrading undeveloped quality. This may also limit the ability of scientists to understand cause of death as well as prevent recovery of any bear parts that could otherwise have been distributed to Tribes and First Nations who identify grizzly bears as an ethnographic resource.

Several alternatives were considered and dismissed due various aspects that would result in failure to meet the goals of the restoration and preserve the qualities of wilderness. After considering all the impacts and benefits cumulatively for each analyzed alternative, Alternative 2 preserves wilderness to the greatest degree, using the minimum tool necessary to implement grizzly bear restoration in the NCE and meet all objectives.

Approved?	Prohibited Use	Quantity, Timing, Frequency, or Duration
<input checked="" type="checkbox"/>	Mechanical Transport:	Up to 144 helicopter flights for translocations over 5-10 years; up to 36 helicopter flights for radio-collar retrieval over 5-10 years; 2 fixed-wing surveys per year for 5-10 years
<input type="checkbox"/>	Motorized Equipment:	Click or tap here to enter text.
<input type="checkbox"/>	Motor Vehicles:	Click or tap here to enter text.
<input type="checkbox"/>	Motorboats:	Click or tap here to enter text.
<input checked="" type="checkbox"/>	Landing of Aircraft:	Up to 144 landings for translocation operations and up to 36 landings for radio-collar recovery operations, over 5-10 years
<input type="checkbox"/>	Temporary Roads:	Click or tap here to enter text.
<input type="checkbox"/>	Structures:	Click or tap here to enter text.
<input checked="" type="checkbox"/>	Installations:	Up to 36 radio-collars for 3-4 years deployment each; up to 36 ear tags for the life of the bear

Describe mitigation measures as well as monitoring and reporting requirements, if appropriate:

All aircraft use over wilderness will not exceed the minimum necessary to safely translocate grizzly bears and personnel, confirm safety of operations, and achieve monitoring objectives. Aircraft use will strive to be conducted Monday through Thursday as much as possible, understanding that live capture of wildlife may not be conducive to that schedule at all times and some schedule deviations are acceptable in order to prioritize animal welfare. All helicopter and fixed wing flights, flight routes, and flight hours over the wilderness shall be recorded and shared with the appropriate personnel at North Cascades National Park Service Complex on an

annual basis. These reports should include flight hours, type of aircraft, and any landings (including delivery of slingloads) in wilderness. Staff at release sites will remove all equipment and supplies at the time of culvert trap extraction following each release and leave the release area in the state it was originally encountered. All mortality investigations will attempt to collect any man-made objects associated with the carcass (ear tags, radio-collars).

Approvals

Project Title (from page 2):

NORTH CASCADES ECOSYSTEM GRIZZLY BEAR RESTORATION

Refer to agency policies for the following signature authorities:

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APPENDIX C – Correction to the Environmental Impact Statement

Figure 4 of the EIS

After the final Environmental impact statement was published, a minor spelling error was identified in the legend of figure 4 of the EIS. “Nonessential Experimental Population” was accidentally misspelled. The figure below includes the corrected legend.

