



United States Department of the Interior

NATIONAL PARK SERVICE

Pacific West Region
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IN REPLY REFER TO:
L7617 (PWRO-PP)

19 MAY 2015

Memorandum

To: Superintendent, Mount Rainier National Park
Superintendent, North Cascades National
Park Service Complex

From: Acting Regional Director, Pacific West

Subject: Environmental Compliance for Restoration of Fishers into
the Cascade Mountain Ecosystem

The *Finding of No Significant Impact* for this jointly-prepared wildlife reintroduction plan is approved. When approval to implement the project is announced to the public, all recipients of the Environmental Assessment (EA) must be provided a copy of the Errata with instructions to attach it to their copy of the EA so as to have a complete record of the environmental impact analysis phase.

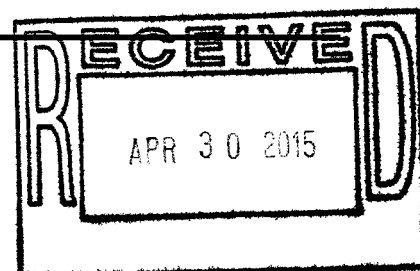
The concerted efforts by staff at both parks to collaborate with the Washington State Department of Fish and Wildlife in developing this initiative will serve as a notable model for other parks to emulate.

We look forward to project updates in coming years.

Patricia L. Neubacher

Attachments

Cc:
PWR-NR



DETERMINATION OF NON-IMPAIRMENT

Fisher Restoration Plan / Environmental Assessment

April 2015

The Prohibition on Impairment of Park Resources and Values

NPS *Management Policies 2006*, §1.4.4, explains the prohibition on impairment of park resources and values: "While Congress has given the Service management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the 1916 Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them. The impairment of park resources and values may not be allowed by the Service unless directly and specifically provided for by the legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment."

What is Impairment?

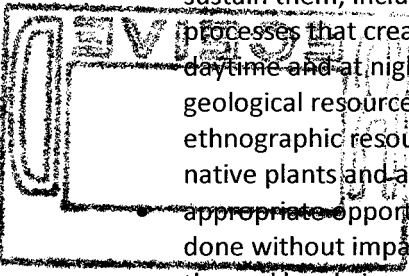
NPS *Management Policies 2006*, §1.4.5, What Constitutes Impairment of Park Resources and Values, and §1.4.6, What Constitutes Park Resources and Values, provide an explanation of impairment. "Impairment is an impact that, in the professional judgment of the responsible NPS manager, will harm the integrity of park resources or values, including the opportunities that otherwise will be present for the enjoyment of those resources or values." §1.4.5 of *Management Policies 2006* states:

"An impact to any park resource or value may, but does not necessarily, constitute 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 as a goal in the park's general management plan or other relevant NPS planning documents as being of significance."

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. An impact that may, but would not necessarily lead to impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park."

Per §1.4.6 of *Management Policies 2006*, park resources and values at risk for being impaired include:

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- “the park's scenery, natural and historic objects, and wildlife, and the processes and condition 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, structure, 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.”

Both MORA and NOCA have developed foundation documents (MORA's Foundation Document is awaiting approval as of April 2015) that describe the purpose and significance of each unit of the national park system which are subject to the no-impairment standard.

Impairment Determination for the Selected Alternative

Based on the 1916 Organic Act, the North Cascades National Park Service Complex General Management Plan, the Lake Chelan National Recreation Area General Management Plan, the Ross Lake National Recreation Area General Management Plan, and the Mount Rainier National Park General Management Plan, topics from the EA that were evaluated for potential impairment due to implementation of the Selected Alternative include: Rare, Threatened, and Endangered Species; Wildlife and Wildlife Habitat; Soundscapes and the Acoustic Environment; and Wilderness. Non-resource topics such as visitor use and experience, neighboring landowners, land use and socioeconomics, and park operations and safety that were also discussed in the EA are not subject to impairment determinations.

Rare, Threatened, and Endangered Species

The selected alternative will not result in impairment to rare, threatened, and endangered species in North Cascades National Park Service Complex or Mount Rainier National Park because although there will be short- to long-term, negligible to moderate adverse impacts to these species as a result of competition for forest cover and prey and predation, the diversity and abundance of prey in the Cascades is assumedly sufficient to support healthy fisher populations (i.e. conditions that would affect the health of wildlife in the parks have not changed dramatically since fishers were present). Furthermore, the selected alternative will have a long-term, minor, beneficial impact on the fisher by increasing the size and expanding the geographic range of this species within its historic range.

Wildlife and Wildlife Habitat

The selected alternative will not result in impairment to wildlife and wildlife habitat in North Cascades National Park Service Complex or Mount Rainier National Park because although there will be adverse long-term, minor effects on fisher prey species in these locations, impacts to the overall ecosystem from the restoration of the fisher are expected to be beneficial, long-term, and negligible to minor, as a native predator-prey relationships

would be more fully restored while sufficient habitat would remain functional to maintain viability of all species. In addition, impacts to fisher predators will be long-term and beneficial.

Soundscapes and the Acoustic Environment

The selected alternative will not result in impairment to soundscapes and the acoustic environment in North Cascades National Park Service Complex or Mount Rainier National Park because although noise impacts from fisher reintroduction efforts would be adverse, short-term, and negligible to minor, these impacts would be infrequent, transient, localized – tied primarily to the location of fishers, and would cease entirely after two years following implementation in each park. In general, natural sounds would prevail under this alternative.

Wilderness

The selected action will involve the restoration and monitoring of fishers using tracking collars or implants, telemetry flights, and camera and hair snare stations. These actions would have short-term, negligible to minor, adverse impacts on the untrammeled, undeveloped, and opportunities for solitude qualities of wilderness character. However, these actions would not cause impairment to the Mount Rainier and Stephen Mather Wildernesses as fisher restoration would eventually result in long-term, negligible to minor, beneficial impacts to the natural and other features of value qualities of both wildernesses. While these beneficial impacts would be long-lasting, the adverse impacts would quickly fade within several years of implementation in each wilderness. Aerial telemetry flights, the most intense impact would extend for only two years following implementation, while longer term monitoring associated with the installation of cameras and hair snares stations, which are temporary in nature, would extend for several years following the initial release of fishers on NPS lands.

Summary

As described above, adverse effects and environmental impacts anticipated as a result of implementing the selected alternative on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or identified as significant in the park's general management plan or other relevant NPS planning documents, will not rise to levels that will constitute impairment of park values and resources in Mount Rainier National Park nor the NPS units within North Cascades National Park Service Complex.



FINDING OF NO SIGNIFICANT IMPACT

Fisher Restoration Plan / Environmental Assessment

April 2015

Introduction

This Finding of No Significant Impact (FONSI), as required by the National Environmental Policy Act of 1969 (NEPA), documents the decision of the National Park Service (NPS) to adopt the agency-preferred alternative presented in the *Mount Rainier National Park and North Cascades National Park Service Complex Fisher Restoration Plan / Environmental Assessment* (EA) and the NPS's determination that implementing this course of action will not result in significant impacts on the quality of the human environment. Mitigation measures designed to avoid or minimize impacts to park resources and a summary of agency coordination and public comment are also provided. An errata prepared as technical attachment to the EA (to provide clarification on language in the EA and a detailed response to public comments) is attached as Appendix A; and the Minimum Requirements Decision Guide, prepared in accordance with Director's Order 41: Wilderness Stewardship, is attached as Appendix B. A determination of non-impairment, as required by the NPS Organic Act of 1916, has been completed separately.

This FONSI and the environmental assessment (combined with Errata) constitute the record of the environmental impact analysis and decision-making process for the restoration of the fisher within Mount Rainier National Park (MORA) and North Cascades National Park Service Complex (NOCA) (which includes North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area).

Selection of the Preferred Alternative

Of the two management alternatives evaluated in the EA, the NPS will implement Alternative B: Reintroduce Fishers into Mount Rainier National Park and North Cascades National Park Service Complex (which was identified in the EA as the Preferred Alternative and the Environmentally Preferable Alternative) as the selected alternative. The proposed actions, as detailed in the EA under Alternative B and summarized below, remain unchanged. No new issues, additional reasonable alternatives, or mitigation measures were suggested during the public review process; therefore none of the comments necessitated changes to the proposed actions.

Under the selected alternative, the NPS will partner with the Washington State Department of Fish and Wildlife (WDFW) to reintroduce fishers in MORA, within the southwestern (SW) Cascades reintroduction area, and NOCA, within the northwestern (NW) Cascades reintroduction area. NPS funds will be allocated toward assisting the State with restoration efforts, and fishers will be reintroduced directly on NPS lands.

The selected alternative adopts WDFW's *Implementation Plan for Reintroducing Fishers to the Cascade Mountain Range in Washington* (available at wdfw.wa.gov/publications/01556/), as it applies to MORA and NOCA, and relies on the best available science to determine appropriate management actions. As articulated in the State's plan, WDFW plans to capture fishers from a source population that is most closely related to that which historically occurred in the state (preferably from British Columbia) and plans to reintroduce them in up to 16 candidate release sites in the SW and NW Cascades of Washington State (nine in the SW Cascades; seven

in the NW Cascades) over the course of a minimum of four years (at least two years of releases per reintroduction area) with monitoring beginning immediately following release efforts. Of these 16 sites, two are in MORA, the Nisqually River and Ohanapecosh, and three are in NOCA, the lower Thunder Creek drainage, the north fork of the Cascade River, and Ross Lake and Big Beaver Drainage. The State's goal is to reintroduce a founder population of at least 80 fishers, with a bias toward adults and females, in each of the SW Cascades and the NW Cascades reintroduction areas (160 in total). Under the selected alternative, the NPS will partner with WDFW to release at least a portion of these fishers directly in MORA and NOCA and will assist the State with monitoring fishers on NPS lands following each reintroduction. As the NPS has no jurisdiction on non-NPS lands in the State, this FONSI does not approve or authorize any actions on lands beyond the borders of MORA and NOCA.

Brief descriptions of the elements of the project are listed below. Details of these reintroduction efforts are provided in the EA and are outlined further in WDFW's *Implementation Plan for Reintroducing Fishers to the Cascade Mountain Range in Washington*. Where the details outlined in the EA and the State's Implementation Plan do not align, the NPS will rely on the information in the EA for fisher reintroduction efforts on NPS lands.

Elements of the Selected Alternative

Source Population: WDFW will work with the British Columbia Ministry of Forests, Lands, and Natural Resource Operations (BCFLNRO) and Ministry of Environment (BCMOE), to obtain fishers for translocation to Washington. Because of their genetic similarity to historical Washington fishers, British Columbia fishers will be the first choice as a source population for a reintroduction in the SW and NW Cascades, while Alberta fishers will be the second choice for a reintroduction if fishers are unavailable from British Columbia.

Obtaining and Transporting Fishers: WDFW and British Columbia ministry authorities will be responsible for obtaining, holding, and transporting fishers to Washington. NPS staff will assist as needed and appropriate. The care, use, and handling of fishers during this project will meet or exceed the animal care guidelines of the American Society of Mammalogists and those reviewed and approved by the NPS Institutional Animal Care and Use Committee. Before fishers are transported to Washington, veterinary examinations will be completed to (1) determine if individual fishers are suitable for translocation (i.e., healthy, no debilitating injuries), (2) treat individual fishers for wounds, injuries or infections as needed, (3) vaccinate fishers for rabies and distemper, (4) collect DNA samples, and (5) surgically implant a VHF transmitter (if satellite collars are not used) and insert a passive integrated transponder tag in each fisher for monitoring and identification.

Releasing Fishers in the SW and NW Cascades: While a percentage of the founding populations in the SW and NW Cascades will be reintroduced directly into MORA and NOCA, WDFW (beyond the scope of this FONSI) will likely release fishers on other public lands within the SW and NW Cascades reintroduction areas as part of the State's overall *Implementation Plan for Reintroducing Fishers to the Cascade Mountain Range in Washington*. WDFW's entire Cascades fisher reintroduction project will include the release of approximately 160 fishers into the SW and NW Cascades reintroduction areas over a period of four to eight years, in two stages. The first stage will be the release and monitoring of ≥ 80 fishers in the SW Cascades reintroduction area, some of which will be in MORA, over a two-year period (approximately 40 fishers per year). To meet the founder population objectives, fisher releases will be conducted for a third year if 1) a minimum of 80 fishers is not obtained in years one and two, or 2) fisher survival in years one or two is less than 50 percent. The second stage of the reintroduction will be the release and monitoring of ≥ 80 fishers in the NW Cascades reintroduction area, some of which will be in NOCA, and this second stage will follow the approach and contingencies outlined above for stage one in the SW Cascades reintroduction area. Fishers will not be released in the NW Cascades reintroduction area before the completion of fisher releases in the SW Cascades reintroduction area. Fishers will preferably be released in the late fall / early winter to allow them to acclimate, to establish home ranges, to

locate suitable den sites, and to become aware of potential mates before the mating season. Similarly, when possible, fishers would be released in groups that include more than one adult female and at least one large adult male to facilitate mate acquisition and reproductive success.

Adaptive Management: The project management team will adaptively manage the reintroduction process and the monitoring program to measure reintroduction success. For example, adaptive management could result in changing release sites depending on success from previous years, releasing fishers in the same location two years in a row, or using satellite collars if shown to be effective in the initial years of project implementation. The management team may consult with other fisher or translocation experts when addressing implementation and monitoring issues.

Monitoring Fishers in MORA and NOCA: A monitoring plan will be developed by WDFW and MORA and NOCA to monitor the status of the reintroduction efforts, and data gathered will be used to adaptively manage ensuing implementation tasks. Monitoring in reintroduction areas will be conducted in two phases. Phase 1 will primarily involve telemetry monitoring, via aerial overflights of the project area and on-foot investigations, of radio-transmitted fishers. This phase will begin as soon as fishers are released in the first two years in a reintroduction area, and will continue until year three, when transmitters reach their expected lifespan. Phase 1 monitoring will be extended to a fourth year if fisher releases are necessary in the third year to meet founder population objectives. Phase 2 of the monitoring program will follow the active telemetry monitoring phase and will be conducted to determine the distribution and abundance of resident fishers. It will involve a multi-year deployment of a sampling grid of hair-snare and remote-camera stations across areas where fishers may have become established within or outside the Cascades Recovery Area. A separate minimum tool analysis will be completed prior to initiating the longer term phase 2 monitoring to better assess the minimum necessary for completing that monitoring once more information is known about where fishers may be establishing home ranges and den sites.

Visitor Use and Outreach. MORA and NOCA will conduct outreach activities concerning the recovery effort. Specifically, if funding is available, education and interpretive measures such as developing brochures, publications, and information on MORA and NOCA's websites about the fisher biology, fisher ecology, and the restoration program could be implemented. The NPS and WDFW will also seek opportunities and support to involve citizen science in the fisher reintroduction process. Opportunities will focus on fisher monitoring efforts. As the reintroduction program develops, opportunities could be expanded to include working with the NPS and WDFW outreach and education coordinators. Throughout the project, the NPS and WDFW will communicate with the public through press releases and other outreach tools about status of reintroduction and monitoring.

As part of the EA process, the NPS also evaluated the need for intervention in wilderness, and analyzed the minimum tool options for taking action within designated wilderness, using the Minimum Requirements Decision Guide (MRDG)(a draft version was originally presented for public comment in the EA appendices). Based on this analysis, the NPS concluded that fisher restoration within the Mount Rainier Wilderness and Stephen Mather Wilderness is a necessary action, and therefore meets the minimum requirement for administration of these areas as wilderness. It was also determined that the alternative, *Satellite Collars Tested; Hair-Snares & Remote Camera Stations Installed by Foot*, in comparison with other alternatives considered, would be the minimum tool suitable for fisher restoration within these wilderness areas because it best protects and restores the natural quality of wilderness character while minimizing impacts to the other three qualities. This mode of action is incorporated as a component of the selected alternative. It should be noted that this process only identifies what are the minimal actions required to undertake restoration activities in wilderness, and does not constitute approval of the overall project. The final MRDG is attached (Appendix B).

Mitigation Measures

To minimize potential adverse impacts associated with the selected alternative, the following mitigation measures and best management practices (BMPs) will be implemented during fisher restoration efforts in MORA and NOCA.

Resource Protection Measures	Responsible Party
Species of Special Status	
Fishers will not be released during marbled murrelet and northern spotted owl nesting seasons.	MORA/NOCA Wildlife Biologist
All fixed-wing radio telemetry flights will be at flight elevations higher than 500 feet agl or 333 feet above the tree canopy, whichever is higher. When fishers are not detected, flights will be as high as possible, while still close enough to obtain a signal.	MORA/NOCA Wildlife Biologist and WDFW
If wolf dens or rendezvous sites are encountered during field monitoring of fishers, activities will be restricted to outside 0.5 mile of den or rendezvous sites.	MORA/NOCA Wildlife Biologist
All known bald eagle territories will be avoided during telemetry flights.	NOCA Wildlife Biologist
Landscapes selected by fishers will be mapped and evaluated to assess assumptions made on predicted elevation and habitat selection patterns of restored fisher population, and the degree of overlap with northern spotted owls and lynx.	MORA/NOCA Wildlife Biologist and WDFW
Wildlife	
Check and treat individual fishers for fleas, ticks, endoparasites, distemper, and rabies. Inspect and certify each fisher as suitable for release by a licensed veterinarian prior to release under standard protocols.	MORA/NOCA Wildlife Biologist and WDFW
Crews working on field projects will record signs of fisher presence and activity.	MORA/NOCA Wildlife Biologist
Invasive Species	
Prior to entering the backcountry, staff will check boots, backpacks, and other equipment for weed seeds, mud that could harbor weed seeds, and plant parts. These materials will be removed to prevent the spread and introduction of non-native plants.	MORA/NOCA Wildlife Biologist and WDFW
Wilderness	
Fisher releases will occur along roads or trails by vehicle and foot, outside of designated wilderness.	MORA/NOCA Wildlife Biologist
Satellite collars (which do not require as many flights as radio-telemetry) will be used on a trial basis, starting with a few males in the first year of reintroductions. If these collars are proven to be effective (in that they have little impact to fisher, they are light enough for females to carry, they provide good data collection, there are few instances of collars falling off animals, and the collar has an extended life, etc.), these collars will be increasingly used as these could reduce impacts to wilderness character and enhance the outcomes of fisher restoration in the SW and NW Cascades.	MORA/NOCA Wildlife Biologist and WDFW
All cast collars and collars from mortalities would be retrieved via foot access where reasonable access allows.	MORA/NOCA Wildlife Biologist and WDFW
Where access allows, telemetry will be completed by foot.	MORA/NOCA Wildlife Biologist and WDFW

All fixed-wing radio telemetry flights will be at flight elevations higher than 500 feet agl or 333 feet above the tree canopy, whichever is higher. When fishers are not detected, flights will be as high as possible, while still close enough to obtain a signal.	MORA/NOCA Wildlife Biologist and WDFW
Whenever possible (weather permitting), aerial telemetry flights will occur between Monday and Thursday, with a maximum of five flights per month.	MORA/NOCA Wildlife Biologist and WDFW
Flights would occur only so long as staff obtain signals from the VHF transmitters.	MORA/NOCA Wildlife Biologist and WDFW
All aerial telemetry flights over MORA or NOCA will be reported to the aviation coordinator at each respective park at the end of the year. Report should include flight hours and type of aircraft.	MORA/NOCA Wildlife Biologist
All other monitoring activities, such as carcass retrieval and temporary camera installations, will occur by foot within designated wilderness.	MORA/NOCA Wildlife Biologist
A separate Minimum Requirements Analysis will be completed for the installation of all camera and hair snare stations in MORA and NOCA to minimize activity within designated wilderness.	MORA/NOCA Wildlife Biologist
The number of temporary camera and hair snare stations installed and the duration of operation of each will be tracked and reported to the wilderness district ranger at each respective park at the end of the year.	MORA/NOCA Wildlife Biologist
Visitor Experience	
Each park will notify their visiting public about the possibility of experiencing aerial telemetry flights as a result of fisher restoration and monitoring efforts.	MORA/NOCA Public Information Officer

Other Alternatives Considered

A no action alternative was also evaluated in the EA. Under the No Action Alternative, current management would continue. The NPS would not partner with WDFW to restore fishers into Mount Rainier National Park or North Cascades National Park Service Complex. No NPS funding would be allocated to fisher restoration, and no fisher reintroductions would occur on NPS lands. However, the State of Washington would likely proceed with fisher restoration in the southwestern Cascades as outlined in WDFW's *Implementation Plan for Reintroducing Fishers to the Cascade Mountain Range in Washington*, only no reintroductions would occur directly in Mount Rainier National Park. With a successful reintroduction, fishers would become distributed throughout the southwestern Cascades and could become established in Mount Rainier National Park over time.

Alternatives Considered and Dismissed

The NPS also considered, but rejected from analysis in the EA two alternatives to the identified reintroduction locations and two alternatives to the identified reintroduction methods.

The alternative "Allow Fishers to Return Naturally" was dismissed from further consideration because it would fail to meet the project objectives. Fishers would not be restored to both the SW and NW Cascades under this alternative as there are no nearby fisher populations to naturally immigrate to these ecosystems. The alternative "Implement Reintroduction in One Park Only" was also dismissed because it did not meet the purpose, need, and objectives for action as fisher restoration in both reintroduction areas would be unlikely due to the physical and habitat barrier that I-90 poses to fisher immigration between the SW and NW Cascades.

Both alternatives to reintroduction methods, “Reintroduce Fishers through Soft Release” and “Reintroduce Fishers through Captive Breeding,” were also dismissed because they did not align with the best scientific methods for fisher restoration. Specifically, soft releases are more expensive and have not prevented extensive post-release movements by fishers – the goal of implementing these types of releases. Similarly, a captive breeding program is less scientifically sound than a translocation program, would cost substantially more than a translocation program, would take at least a year longer to implement, and would require additional and more complex federal actions beyond those in the selected alternative while reducing the likelihood of success. For these reasons, captive breeding is primarily used as a last resort for populations at risk where an adequate number of founders are not available. That situation is not the case here, and therefore, while *NPS Management Policies 2006* permit the use of captive breeding for restoring a species to its native habitat, the NPS determined that there was no need in this instance to consider such an expensive and risky endeavor to restore the fisher to the SW and NW Cascades of Washington State.

Environmentally Preferable Alternative

The Council on Environmental Quality (CEQ) regulations implementing NEPA and the National Park Service NEPA guidelines require that the “agency, in reaching its decision, [specify] the alternative or alternatives which were considered to be environmentally preferable” (CEQ Regulations, section 1505.2). The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources. The environmentally preferable alternative is identified upon consideration and weighing by the Responsible Official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources (40 CFR 1505.2(b)).

In accordance with the criteria outlined in NEPA and DO-12, an Environmentally Preferable Alternative meets the following criteria: (1) Fulfills the responsibilities of each generation as trustee of the environment for succeeding generations; (2) Ensures for all Americans, safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) Attains the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences; (4) Preserves important historic, cultural, and natural aspects of national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice; (5) Achieves a balance between population and resource use that will permit high standards of living and wide sharing of life’s amenities; and (6) Enhances the quality of renewable resources and approach the maximum attainable recycling of resources.

Alternative B, the selected alternative is the environmentally preferable alternative as it meets all of the criteria above, with limited impacts to the biological and physical environment. This alternative does more than the ‘No Action Alternative’ to fulfill the responsibilities of each generation as trustee of the environment for succeeding generations (#1) and achieve a balance between population and resource use (#5) by restoring a species to its historic range that was once extirpated due primarily to human action. It preserves important natural aspects of national heritage and maintains an environment that supports diversity (#4) by restoring ecological diversity within and surrounding MORA and NOCA, and in so doing, it attains the widest range of beneficial uses of the environment (#3). This alternative also ensures for all Americans, safe, healthful, productive, and aesthetically and culturally pleasing surroundings (#2) in providing opportunities for visitors to experience a native carnivore in its natural environment.

In comparison, the ‘No Action’ alternative does not meet the criteria as the environmentally preferred alternative relative to the Alternative B the ‘Selected Alternative’. The No Action Alternative excludes restoration of fisher from occurring in the NW Cascades. Additionally, flexibility required to ensure a successful restoration of the fisher in the SW Cascades would not be maximized as reintroductions would not be allowed

on NPS land. Thus, this alternative does not best fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations (#1), nor does it best protect, preserve, or enhance natural resources (#4). It also fails to attain the widest range of beneficial uses of the environment (#3) as the fisher would continue to be extirpated from the NW Cascades.

While the no action alternative would cause the least amount of damage to the biological and physical environment, the selected alternative best protects, preserves, and restores natural resources in both MORA and NOCA while impacting resources only slightly more than the no action alternative. The selected alternative is therefore considered the Environmentally Preferable Alternative.

Why the Selected Alternative will not have a Significant Effect on the Human Environment

Using the ten significance criteria as defined in the Council on Environmental Quality's NEPA regulations (Section 1508.27), the NPS has determined that the selected alternative can be implemented with no significant adverse impacts on species of special status; wildlife; wilderness; the acoustic environment/natural soundscapes; visitor use and experience; neighboring landowners, land use, and socioeconomics; or park operations.

Similarly, no major adverse impacts were identified that will require analysis in an EIS. Rather, the selected management alternative will have adverse impacts that range from negligible to moderate. Adverse impacts to species of special concern, wilderness, soundscapes and the acoustic environment, visitor use and experience, and park management and operations will range from negligible to minor. Adverse impacts to wildlife and wildlife habitat will be minor, and adverse impacts to neighboring landowners, land use, and socioeconomics will range from negligible to moderate. For the majority of impact topics, there will be long-term beneficial impacts.

The following criteria were used to determine the significance of each impact:

Effects on public health and safety.

In accordance with NPS Management Policies 2006, the fisher "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." As discussed in the analysis of the MRDG, there are safety concerns related to the use of fixed wing aircraft, but otherwise no impacts to public health and safety have been identified in the process of preparing the Plan /EA.

Unique characteristics of the area (proximity to historic or cultural resources, wild and scenic rivers, ecologically critical areas, wetlands or floodplains, and so forth).

While the NPS will not be reintroducing fishers directly in the Mount Rainier and Stephen Mather wilderness areas, it is assumed that fishers will travel to and through and establish home ranges within wilderness, thereby impacting wilderness character. Furthermore, because fishers will likely be present in wilderness, the NPS will complete monitoring within both wilderness areas in order to gather ample information to inform reintroductions in the following years of this proposed project (implement adaptive management) in order to evaluate the success of the reintroductions in the SW and NW Cascades. Adverse impacts are anticipated to be no more than minor considering their intermittent and limited duration.

Degree to which impacts are likely to be highly controversial.

Should the fisher become a federally listed species, fisher restoration in the Cascades could become controversial because fishers may traverse through or den on private lands that could then be required to adhere to specific restrictions to protect a federally listed species. Although the fisher is not currently listed as a federal endangered or threatened species, on October 7, 2014, the USFWS published their proposal to list the

West Coast Distinct Population Segment (DPS) of the fisher as threatened throughout its range (California, Oregon, and Washington). This proposed listing also includes two alternatives to listing the West Coast DPS of the fisher in its full range: 1) list the fisher in a single DPS only in California and Oregon, and 2) list the fisher in two separate, narrowly drawn DPSs around each of the extant native populations in California and Oregon. A final rule on the listing is not expected until September 2015, at the earliest. The selected alternative is consistent with USFWS plans and policies to protect and promote recovery of federally listed and candidate species; so land management practices on most lands within the SW and NW Cascades fisher reintroduction areas are not expected to change regardless of a federal listing. Furthermore, a successful fisher restoration in the SW and NW Cascades would contribute to meeting state recovery goals and could result in the downlisting the species from its endangered status in Washington.

Degree to which impacts are highly uncertain or involve unique or unknown risks.

There were no highly uncertain, unique, or unknown risks identified during preparation or public review of the EA. While a potential future federal listing of the fisher may impact neighboring landowners, land use, and socioeconomics if fishers are present in the SW and NW Cascades, projecting the intensity and scale of these impacts from proposed fisher reintroductions is conjecture at this time because of the uncertainty and number of variables associated with such a potential listing.

Whether the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.

The selected alternative neither establishes a precedent for future actions with significant effects, nor represents a decision in principle about a future consideration.

Whether the action is related to other actions that may have individual insignificant impacts but cumulatively significant effects.

The impacts of the selected alternative on each impact topic were identified in the EA. Cumulative impacts to each resource were also identified and none will have cumulatively significant effects.

Degree to which the action may adversely affect historic properties in or eligible for listing in the National Register of Historic Places, or other significant scientific, archeological, or cultural resources.

There will be no adverse impacts to cultural resources, including historic properties in or eligible for listing in the National Register.

Degree to which an action may adversely affect an endangered or threatened species or its habitat.

The selected alternative may affect but is not likely to adversely affect the Canada lynx, gray wolf, grizzly bear, northern spotted owl, and marbled murrelet. The selected alternative would have no effect on the townsend's big-eared bat, bald eagle, peregrine falcon, bull trout, Puget Sound chinook salmon, or Columbia spotted frog. Mitigation measures described previously will help to minimize potential impacts to any of these species.

Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The selected alternative does not violate any federal, state, or local law, or requirements imposed for protection of the environment.

Public Involvement

Scoping

The formal public scoping period for the Fisher Restoration Plan / Environmental Assessment (EA) began on August 15, 2013 and extended through September 30, 2013.

The NPS announced the public scoping period and invited public comment through press releases, websites, mailings, and information distributed at park visitor centers and the Washington State Fair. A press release was distributed to local and regional news media on August 15th, at least eight of whom carried the story, including The Seattle News Tribune, The Seattle Times, The Columbian, The Herald (out of Everett, WA), The Bonney Lake Sumner Courier – Herald, The Seattle Weekly, The Olympian, and The Centralia Chronicle. A few organizations also posted information about the proposed plan on their websites, including North Cascades Institute, National Parks Conservation Association, Northwest Hiker, Washington Trails Association, and Wilderness Watch. Information about the planning effort was posted on Mount Rainier National Park's and North Cascades National Park Complex's NPS official websites, and a project-specific public website was created through the NPS Planning, Environment, and Public Comment (PEPC) website to provide documents and information about the planning effort. This website also included a venue to accept public comments. NPS staff produced and mailed/emailed a one-page, double-sided newsletter to approximately 1,100 individuals, agencies, organizations, governmental representatives, and tribal governments. In addition to the mailing, this newsletter was distributed at park visitor centers and at the Mount Rainier National Park's booth at the Puyallup Fair throughout the month of September. Throughout the public scoping period, the public was invited to submit comments by regular mail or online on the project website on PEPC.

During the public scoping period, the NPS received correspondence from approximately 525 individuals, agencies, and organizations. While a number of these correspondences were submitted via mail or online (~40), the majority of correspondences, including a form letter signed by 393 individuals, were submitted via the National Parks Conservation Association (NPCA) who collected comment letters from their members, compiled these electronically, and mailed the NPS a CD containing all correspondences.

Following the public scoping period, Mason Reid, wildlife ecologist (now retired) at MORA and project lead for this EA, hosted a Facebook chat on the proposed fisher reintroduction on March 27, 2014 from 3:00-4:00pm. At least eleven people participated in this conversation – asking questions about the fisher and its diet and reproductive behaviors, competition with other predators, other reintroduction efforts, and information about the proposed reintroduction in MORA.

Review of the EA

The formal public review period for the EA began on September 15, 2014 and extended through October 15, 2014. The NPS announced the public release of the EA and invited public comment through press releases, websites, mailings, public meetings, and information distributed at park visitor centers and the Puyallup Fair.

A press release announcing the availability of the EA was distributed to local and regional news media on September 15, 2014, at least three of whom carried the story, including The Herald (out of Everett, WA), The Eatonville Dispatch, and The Centralia Chronicle. A few organizations also posted information about the proposed plan on their websites, including Conservation Northwest, Washington's National Park Fund, and Defenders of Wildlife.

The release of the EA was also announced via Mount Rainier National Park's and North Cascades National Park Complex's NPS official websites, and the project was featured on the National Park Service's news and events

page. However, most planning information was available through the EA's project-specific public website in the NPS' Planning, Environment, and Public Comment (PEPC) websystem. This website included access to the full EA, its appendices, a public review newsletter, and additional information about the planning effort. This website also included a venue to accept public comments.

In addition to contacting Native American Tribes and the U.S. Fish and Wildlife Service, a cover letter and copy of the EA was mailed to 12 local and regional public libraries for public review. The NPS also produced a cover letter; a one-page, double-sided newsletter; and a small postcard for distribution. The cover letter was mailed to 198 contacts including members of the State and Federal Legislature and interested agencies and organizations, and the newsletter was mailed to 746 individuals on the project's mailing list. The postcards, as well as posters with project information, were posted at park visitor centers and wilderness information centers, the Washington State Fair, and at public open houses.

Finally, the NPS, in partnership with the Washington Department of Fish and Wildlife, held a series of three public meetings (in Sedro-Woolley, Seattle, and Puyallup, Washington) shortly after the release of the EA. Public meetings were announced via a separate press release (distributed to media on September 22, 2014) and the project website on PEPC.

Throughout the public review period, the public was invited to submit comments by regular mail or online on the project website on PEPC.

During the EA public review period, the NPS received a total of 1,368 responses in the form of letters, postcards, phone calls and comments submitted on the NPS Planning, Environment and Public Comment website. Of the comments received, one was from a county government, seven were from businesses, six were from conservation/preservation organizations, and two were from other civic groups. Approximately 470 individuals responded by using one of four different form letters.

The comments were reviewed and broken down into approximately 1,450 unique comments that were reviewed and analyzed to identify substantive concerns as defined by Director's Order 12 "Conservation Planning, Environmental Impact Analysis and Decision-Making". No comments received were deemed substantive. However, the NPS identified 30 comments that called for clarification in the EA or were otherwise noteworthy to the planning team. These comments were grouped into six categories, extracted, and a concern statement was developed to summarize the comment(s). The categories and summarized concern statements are listed below:

Status of Fisher Populations in the Cascades of Washington State

- Please verify that populations for fishers do not already exist in the proposed reintroduction area.

Feasibility of Reintroduction

- Ensure that there is sufficient habitat to support the reintroduction.
- Protect against loss of habitat or decline of habitat suitability.
- Work with land owners and government agencies to ensure habitats in adjacent lands are suitable for this project and isolation of sub-populations of fishers does not occur due to habitat fragmentation.
- Climate change will likely impact the fishers and the future suitability of habitat and prey for fishers in the Cascades.
- Implement effective protection and enforcement strategies to restrict poaching or trapping of fishers
- Consider the impacts to fisher populations of rodenticides used in and around proposed reintroduction areas.

- Successful reintroduction of fishers in larger than expected populations may cause unexpected impacts to local communities, which could in turn cause conflicts between human and fishers. Are there safeguards in place to protect individuals from these impacts and/or to protect the fishers if their populations exceed the capacity of the reintroduction area?

Alternatives for Consideration

- Please reintroduce the fishers and then leave them alone.
- The fisher reintroduction project should be sure to allow time for identification of unanticipated impacts and to allow these impacts to be addressed.
- The selected alternative must include a component to address noxious weeds.

Impacts

- The EA many have misstated the forces effecting lynx populations in the Okanagan areas. I believe that there have not been any influences on lynx populations other than habitat change from fire.
- Please address the possibility of unintentional consequences on noxious weed control activities caused by the proposed fisher reintroduction.
- With limited funds available for park operations we are concerned that funds will be reallocated from other very important efforts, specifically noxious weed management, to the fisher reintroduction project.

Public Involvement and Communication

- Be sure to involve the public throughout this project. Seek out volunteers to keep costs low and increase public support and remain in touch with the public about the status of the fisher's recovery once reintroductions are completed.

Consultation and Coordination

- Coordinate with other agencies – specifically the USFS and Washington State Department of Fish and Wildlife, and nonprofits, like Defenders of Wildlife and other environmentally conscious groups, to ensure that fisher recovery is successful.

Costs

- Costs for reintroduction should be mitigated by using volunteers to assist with project implementation.

Most of these concerns were addressed in the EA; and those that were not previously addressed were not considered to be substantive since they did not change the accuracy of information, the adequacy of the environmental analysis, or present reasonable alternatives. The NPS' response to these concerns, are included in Appendix A, part 2.

Consultation and Coordination

U.S. Fish and Wildlife Service

The NPS initiated informal consultation on this project with the USFWS on June 24, 2013. During an informal consultation meeting, the NPS obtained a list of federally listed endangered and threatened species that may be present in the project area and affected by the proposed action from the USFWS. The list was used as the basis for the special status species analysis in this EA and the *Biological Assessment* (BA) prepared for the proposed action (included as Appendix A in the EA). Based on the analysis in this EA and BA, the National Park Service has determined that the selected alternative is not likely to adversely affect federally listed species, including the marbled murrelet, northern spotted owl, gray wolf, grizzly bear, Canada lynx or critical habitat within the project

areas. The project would have no effect on other federally-listed species. The *Biological Assessment* prepared for this EA was submitted to USFWS on September 15, 2014 with a request for their review and concurrence with this determination. The USFWS concurred with the NPS' findings in a letter dated March 12, 2015.

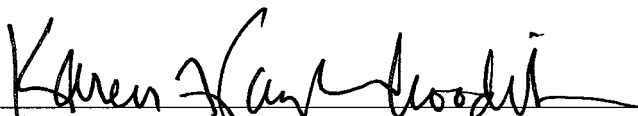
Washington State Historic Preservation Office and Native American Tribes

Consultation with the State Historic Preservation Officer (SHPO) and tribes was initiated on August 15, 2013, with a letter a scoping newsletter distributed to the SHPO and tribes affiliated with MORA and NOCA. MORA also held an annual meeting with tribes in June 2013 and discussed the EA and proposed actions at that time. No comments were received from either the SHPO or tribes following scoping. The NPS also mailed a cover letter and the full EA to thirteen MORA- and/or NOCA-associated federally recognized tribes, including the Colville Confederated Tribes, Confederation Tribes and Bands of the Yakama Nation, Cowlitz Indian Tribe, Muckleshoot Indian Tribe, Nisqually Indian Tribe, Nooksack Indian Tribe, Puyallup Tribe of Indians, Samish Tribal Nation, Sauk-Suiattle Tribe, Squaxin Island Tribe, Swinomish Tribe, and Upper Skagit Indian Tribe on September 15, 2014. Representatives for each of these groups were also given the opportunity to comment during the public scoping period in 2013. No comments from tribal representatives were received during either comment period.

Conclusion

Based on the environmental impact analysis contained in the Environmental Assessment, the mitigation measures designed to avoid, reduce, or eliminate potential impacts, and the results of public review and agency coordination, the National Park Service has determined that the selected alternative does not constitute a major federal action that will significantly affect the quality of the human environment. The selected alternative is not without precedent, nor is it similar to an action which normally requires an environmental impact statement. No connected actions with potential significant impacts were identified. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality, an Environmental Impact Statement will not be prepared, and the project will be implemented as soon as practicable. Reintroductions could begin as early as Fall 2015.

RECOMMENDED


Superintendent, North Cascades National Park Service Complex

4/27/2015
Date

RECOMMENDED


Superintendent, Mount Rainier National Park

4/30/15
Date

APPROVED


Regional Director, Pacific West Region
acting

5/19/15
Date

Appendix A: Errata for Mount Rainier National Park and North Cascades National Park Service Complex Fisher Restoration Plan / Environmental Assessment, April 2015

This Errata (Part 1) documents changes to the text of the Mount Rainier National Park and North Cascades National Park Service Complex Fisher Restoration Plan / Environmental Assessment (EA) made following public release of the EA in September 2014. These changes correct, clarify or modify original text based on public comments and/or actions that have changed. There are no modifications that result in substantial alteration of determination of effects, nor which substantively amend proposed actions.

Part 2 documents overarching comments received during public review, and Park responses. There was no change in any determinations of environmental impact or any substantial modifications incorporated into the selected alternative as a result of any of the comments listed (nor in any contained in the administrative record).

This Errata must be attached to the original EA so as to comprise the full and complete record of the environmental impact analysis completed for this initiative.

Part 1: Edits and Corrections to the EA

1. *In Appendix A, subsection Canada Lynx (Federal Threatened):* The sentence “Lynx population stability in the northeastern Cascades probably depends on immigrants from British Columbia (Stinson 2001)” should read “Lynx population stability in the northeastern Cascades probably depends on immigrants from British Columbia (Stinson 2001) and is influenced by impacts of fire on available habitat (Koehler et al. 2008).”
2. *In Appendix B, Alternative 3, Impacts to Other Features of Value (page 203):* The box in row #1 under the column for Positive Impacts to Mount Rainier National Park (MORA) should be unchecked.

Part 2: EA Comments and Responses

Status of Fisher Populations in the Cascades of Washington State

Concern 1: *Please verify that populations of fishers do not already exist in the proposed reintroduction areas as this reduces the need for action and could destroy the integrity of the genetics of any existing population.*

Representative Comments:

“I would have more confidence in the NPS plan if I thought it was based on accurate information. I have been hiking in the Cascades for the last 67 years and have always seen fishers there, right up to the current day.”

“Do not reintroduce fisher from a different genetic population. The NPS should prove that there are no fisher locally that are genetically adapted to the area. If fisher from a different genetic base are introduced and overwhelm the local few remaining fisher, valuable genetic information will be lost.”

NPS Response:

Because martens, mink, otters, and marmots are often misidentified as fishers, biologists use only verifiable detections (i.e., photo, video, specimen, or DNA) to provide definitive evidence of a fisher detection. As stated in the EA on page 7, “Between 1990 and 2004, WDFW, the NPS, and U.S Forest Service (USFS) conducted extensive surveys throughout the historical range of the fisher in Washington to detect fishers as well as other forest carnivores. Despite these extensive efforts, no fishers were detected and no population was known to exist (Lewis and Stinson 1998, Aubry and Lewis 2003, Hayes and Lewis 2006, Christophersen et al. 2005, Christophersen 2006, Reid et al. 2010). In the two parks, fishers have been considered extirpated from MORA since 1935, and were last documented via sightings/tracks in NOCA in 1989 (Lewis and Stinson 1998; Aubry and Houston 1992). Both parks

receive occasional reports of fisher observations; however, none have been verified. The NPS completed a number of carnivore studies within MORA and NOCA to detect fishers and other carnivores between the 1980s and early 2000s. During the winters of 2000-2002, a parkwide survey to detect forest carnivores was completed at MORA using remote cameras (Reid et al. 2010). The methodology used was the same used to successfully detect fisher presence elsewhere (Zielinski and Kucera 1995), but despite 46 camera stations, 1571 camera nights, and photo documentation of seven of the forest carnivores, including American marten, no fishers were detected. From the summer of 1988 to the spring of 1992, park staff at NOCA conducted a vertebrate survey in the Stehekin Valley, but over the course of those four years no fishers were detected (Kuntz and Glesne 1993). Similarly, Christophersen et al. (2005) conducted a more targeted survey of forest carnivores in 2003 and 2004, using the same methodology as the MORA survey, and despite the 78 camera stations, 2,178 camera nights, and photo documentation of seven other forest carnivores, again, no fishers were detected."

Similarly, although the native fisher population in Washington State is now extirpated, WDFW and the NPS will be reintroducing fishers which are the most closely related to those which historically occurred in the SW and NW Cascades. As the EA states on page 23, "The findings of genetic analyses indicate that fishers that historically occurred in Washington are most closely related to the extant fisher population in British Columbia, followed by the California population, and then by the western Alberta population (Lewis and Hayes 2004). Because of their genetic similarity, British Columbia fishers would be the first choice as a source population for a reintroduction in the SW and NW Cascades..."

Feasibility of Reintroduction

Concern 2: Please ensure that there is sufficient habitat to support the reintroduction.

Representative Comments:

"My question is about sufficient natural forage supply to support an introduced population of fisher in an environment where the "historic" population had been extirpated. Transplant introductions often seem to create more problems than anticipated, as habitat conditions and uses have changed during the species absence."

"My only concern would be whether or not the current ecosystem, in its tremendously weakened and changed state since they lived there before, can adequately support them. Please make sure you've done your homework on their chance of survival..."

NPS Response:

In the Pacific coastal states, fishers are closely associated with habitat elements found in late-successional forests such as large trees, snags, and logs which are important as resting and denning sites for this species. For the purposes of the habitat assessment, which was a large part of WDFW's *Feasibility Assessment for Reintroducing Fishers to Washington* completed in 2004 (see response to Concern #3 below), suitable habitat was defined as low- and mid-elevation, late-successional forest. Based on this definition and on available and project late successional forest habitat in the state, the habitat assessment identified three candidate locations for fisher reintroduction in Washington: the Olympic Peninsula, Northwestern Cascades, and Southwestern Cascades. Together, the Southwestern and Northwestern Cascades encompass approximately 1,146,332 acres of suitable habitat, representing approximately 17 percent of the total 6,755,159 acres in the region. As the study found, these areas of suitable habitat "are large in size, occur across a wide range of elevations, and are not heavily developed with major roads (e.g., state or federal highways) that could restrict fisher movements" (Lewis and Hayes 2004). Similarly, much of the land in the Cascades Recovery Area is protected under public ownership. The U.S. Forest Service and National Park Service alone, manage approximately 3.9 million acres of land in the Cascades, not including the Okanogan Wenatchee National Forest which protects another 4 million acres of land.

Late-successional forests support a diverse and rich array of potential prey for fishers, often providing greater prey diversity and abundance than second-growth forests (Lewis and Hayes 2004). Because there has been no detected decline in prey abundance and Mount Rainier National Park and North Cascades National Park are known to support a diverse array of midsized carnivores that use many of the same prey species as fishers, prey availability for fishers is assumed to be both sufficient and similar to what was available within the two park units prior to their extirpation. Please also see discussion on habitat under Concern #3 below.

Concern 3: Protect against loss of habitat or decline of habitat suitability as any significant loss, especially those due to human impact, may cause declines in reintroduced fisher populations.

Representative Comments:

"Please restore and protect fisher habitat."

"I support reintroduction of fishers in Mt. Rainier and N. Cascades Parks. Please provide them as much protection as possible under all applicable laws and ensure all efforts are made to provide sufficient habitat areas for them to not become genetically isolated."

NPS Response:

As stated in the EA on page 8, "WDFW's *Feasibility Assessment for Reintroducing Fishers to Washington* evaluated fisher habitat in the state and concluded that fisher reintroductions were feasible in the Olympic Mountains and the SW and NW Cascades (Lewis and Hayes 2004). They found that factors that caused fisher extirpation in Washington are no longer significant threats and should not prevent successful reintroduction. Fisher trapping, which was likely the most significant factor contributing to the species' demise, has been prohibited by law since 1934 (and is not allowed in either MORA or NOCA), and body-gripping" traps (e.g., leg-hold traps), that fishers can be incidentally captured in, have been banned in the state since 2000 (Initiative 713; see RCW 77.15.194). There is also an adequate amount and distribution of fisher habitat. According to the Habitat Assessment completed as part of the *Feasibility Assessment for Reintroducing Fishers to Washington*, the Cascade Mountain Range (approximately 12.4 million acres) supports approximately 1.6 million acres of suitable fisher habitat, much of which is contiguous and not heavily dissected by state or federal highways, and Lawler et al. (2012) projects that under climate change projections, the fisher will experience small climate-driven range expansions in the Washington Cascades. About 1.1 million acres of suitable fisher habitat is found on the west side of the Cascade crest and makes up about 17 percent of the western Cascades ecosystem (Lewis and Hayes 2004:22-23)."

Furthermore, much of the land in the Cascades Recovery Area is protected under public ownership. The U.S. Forest Service (USFS) and National Park Service alone, manage approximately 3.9 million acres of land in the Cascades, not including the Okanogan Wenatchee National Forest which protects another 4 million acres of land. As federal agencies, the USFS and NPS are both directed to protect federal and stated listed threatened and endangered species and their habitat in accordance with the Endangered Species Act and through agency directives and policy.

Concern 4: I am concerned about the potential for isolation of sub-populations of fishers occurring due to habitat fragmentation. Please work with land owners and government agencies to ensure habitats in adjacent lands are suitable for this project.

Representative Comments:

"We do ask that other federal agencies, particularly the Forest Service, be brought on board. Fishers are wide ranging and will need protection on National Forest lands between Mt Rainier and North Cascades. We do not want to end up creating isolated sub-populations."

NPS Response:

The NPS and WDFW are partnering on fisher reintroductions in order to coordinate the overall restoration of the species. WDFW has also been coordinating closely with the USFS to be able to release individual fishers on USFS lands within the SW and NW Cascades. The USFS is aware of the proposed actions, but is taking no action at this time.

Reintroducing any wildlife species requires a balanced plan that maximizes the potential for success, builds population-scale resiliency, and is cost effective. Our implementation plan for fisher strikes this balance by releasing 40 fisher/year over two years in the southern area, and 40 fisher/year over two years in the northern area. While spreading the releases over 3 years at each area could further minimize the chance of failure, it also decreases the probability that individuals find each other and reproduce, while simultaneously costing much more to implement. Under the proposed plan, individuals at each location will be released in a shorter time frame and in closer proximity to one another; hopefully, this increases the overall chances of success. It does increase the impact a catastrophic event may pose in a given year, but that risk is small and does not outweigh the other considerations. There is no intention in the current implementation plan for these two reintroduced populations to find each other in a short time frame. In order to build a resilient statewide population, geographic separation of the reintroduction areas is beneficial to guard against population-level catastrophe where fishers are becoming established. Over time, each population should grow in size and eventually connect into a large contiguous population. At that time, even somewhat large impacts (e.g. fire or localized predation) would not likely affect the whole population.

Concern 5: Climate change will likely impact fishers and fisher habitat in the Cascades. While the Cascades currently provide suitable habitat and prey for fishers, this may not be the case in the future.

Representative Comments:

"I encourage you to do all that you can to protect the fisher and the habitats where it lives. Climate change is going to be a threat, and it is critical that the National Park develop strategies to combat the influences of climate change not just for the fisher, but also for other unique subalpine species that make their homes in these National Parks."

NPS Response:

Due to projected increases in temperature and changes in precipitation patterns tied to global climate change, species distributions and phenologies are likely to experience dramatic changes across North America, with cascading effects on ecological communities (Lawler et al. 2012). Fishers in particular are believed to be one of the most sensitive carnivores to climate change and are projected to "lose most of their climatically suitable range in the contiguous United States by the end of the century" (Burns et al. 2003; Lawler et al. 2012, pp 379). However, as stated in the EA, "Lawler et al. (2012) projects that under climate change projections, the fisher will experience small climate-driven range expansions in the Washington Cascades" (page 8). While other climate-driven factors such as temperature extremes, drought, water stress, insect and disease occurrence, and changes in fire frequency and forest structure, and their complex relationships, could impact future fisher habitat throughout the species' current and future range, the Washington Cascades is still projected to provide stable, if not expanded, suitable habitat for this species under climate change projections.

Concern 6: Implement effective protection and enforcement strategies to restrict poaching or trapping of fishers.

Representative Comments:

"Please reintroduce the fishers back into the wild so my children and I can see them in their natural habitat. And please enforce laws that will protect them from poachers and careless hunting."

"I have heard that they want to reintroduce Fishers to the Cascade Mountains. I think that would be wonderful as long as we don't decide to hunt and kill them at a later date like we are doing with the wolves that were reintroduced here several years ago. We need to protect our wildlife and help them persevere!"

NPS Response:

As stated in EA on page 8, “factors that caused fisher extirpation in Washington are no longer significant threats and should not prevent successful reintroduction. Fisher trapping, which was likely the most significant factor contributing to the species’ demise, has been prohibited by law since 1934 (and is not allowed in either MORA or NOCA), and body-gripping” traps (e.g., leg-hold traps), that fishers can be incidentally captured in, have been banned in the state since 2000 (Initiative 713; see RCW 77.15.194).” Hunting and trapping are also prohibited in MORA and North Cascades National Park.

Concern 7: Please consider the impacts to fisher populations of rodenticides used in and around proposed reintroduction areas.

Representative Comments:

“Re-introducing the fisher into the Cascades will be beneficial IF we can provide enough protection for it to thrive. The use of rodenticides, trapping and clear-cut logging will continue to destroy fishers.”

“Please re-introduce fishers back into their natural habitat and protect them from extinction through poaching and trapping, logging, and use of rodenticides in illegal marijuana grow-ops.”

NPS Response:

In 2004, the Washington State Department of Fish and Wildlife evaluated fisher habitat in the state and concluded that the primary factors (e.g., loss and fragmentation of forested habitats, over-trapping, etc.) attributed to extirpation of the species were no longer significant threats (Lewis and Hayes 2004). Of all the potentially important negative factors affecting fisher populations, anti-coagulant rodenticide (AR) presence is the least known across the release areas. However, the NPS does not administer rodenticides in these national parks and works with cooperators and concessions to preclude the use of these agents. Illegal use in park areas is unknown. In addition, only one of five of the recent fisher mortalities recovered in the Olympic peninsula recovery area (2013–2014), showed AR exposure. That individual was recovered just outside the city limits of Port Angeles, and most likely was exposed at a residential setting. Consequently, more recent data indicates that the key risk factor of AR exposures for fisher in other parts of its range (primarily California) may not be as relevant in Washington.

Concern 8: Successful reintroduction of fishers resulting in larger than expected populations may cause unexpected impacts to local communities, which could in turn cause conflicts between humans and fishers. Are there safeguards in place to protect individuals from these impacts and/or to protect the fishers if their populations exceed the capacity of the reintroduction area?

Representative Comments:

“I fully support efforts to reintroduce these wild creatures into the Cascade Mountains, where they used to reside in abundance. However, I also believe that the plan must include protections for fishers, and must be thoroughly vetted to ensure that we do not have conflicts arise with residents, ranchers, etc. We need to learn from the conflicts that have arisen related to the reintroduction of wolves in our State and do our best to avoid a similar situation.”

“Wolverines and other animals who have been in the bead of gun sights need your protection. Wolves and other predators as well. This irrational atmosphere of fear needs to be curbed, and you can take the lead in informing the public that wildlife is not the enemy - and to teach them how to coexist. Fear is a horrible thing if it's based on the irrational.”

NPS Response:

As noted in the EA on page 104, “The reintroduction of fishers at MORA and NOCA might...result in long-term, adverse impacts to local domestic and farm animals such as house cats, rabbits, poultry, and small mammals on

adjacent lands. However, these events are uncommon, even where fishers are abundant, because fishers tend to avoid people and developed areas. Similarly, considering that pet and small livestock owners who may be susceptible to loss of animals from fisher predation already need to protect their pets and small livestock from more common predators that occur at higher densities such as coyote, raccoon, skunks, bobcats, and weasels, the addition of fishers to the SW and NW Cascades regions would not cause any changes to management and animal husbandry. Although individual prey animals could suffer injury or fatality, the overall adverse impact on the pets and livestock would be negligible given the anticipated low densities at which fisher are expected to occur in the Cascades and the presence of more common predators.” Similarly, while it is important to note that fishers are predators, they have not been documented to prey on large domestic animals that, if attacked and killed, could be a significant financial loss to a landowner, resulting in depredation and human/animals conflicts, as has been the case with wolf recovery in the state.

Alternatives for Consideration

Concern 9: Please reintroduce the fishers and then leave them alone.

Representative Comment:

“Please reintroduce the Fishers, and then leave them alone - unlike what has happened with the Wolf!!!!”

NPS Response:

As stated in the MRDG (Appendix B) on page 176, “some of the primary objectives of this proposed action are to: 1) restore self-sustaining fisher populations that are capable of surviving and reproducing by natural means 2) protect and perpetuate the natural distribution and abundance of fishers throughout suitable habitat in MORA and NOCA, and 3) expand scientific understanding regarding habitat use, movement, reproduction and survival, and use such information to adaptively manage fisher restoration in the SW and NW Cascades. All of these objectives require monitoring to detect fishers in the parks/wildernesses, estimate the survival rate of reintroduced fishers, and determine the number of reproducing females and the number of fisher that establish home ranges.”

Concern 10: The fisher reintroduction project should be sure to allow time for identification of unanticipated impacts and to allow these impacts to be addressed.

Representative Comment:

“I think it is important to reintroduce species that were native to their former habitats... It is important to do it in steps, in order to give nature time to adjust for their reintroduction and also for us to evaluate and learn of the impact of bringing them back...”

NPS Response:

Natural resource agencies (e.g., NPS and WDFW) have a limited amount of funding to conduct fisher reintroductions in the Cascades Range of Washington. While there will be an in-depth monitoring project associated with the reintroduction to gauge its success and to indicate when adjustments are needed in the reintroduction process, this limited funding prevents us from conducting a comprehensive assessment of the fisher reintroduction on the Cascades Ecosystem over a long period of time. Because the fisher was a native species, we assume that the reintroduction of fishers to the Cascades Ecosystem will be beneficial by restoring a missing member of the carnivore community. We think this will be beneficial for the Cascades Ecosystem even if it is done in as few as 2 to 3 years, which we think is feasible given the limited funding available. Also see response to Concern #4.

Concern 11: The selected alternative must include a component to address noxious weeds.

Representative Comment:

"We feel that any proposal brought forth for activities within the Park must include a component to address noxious weeds."

NPS Response:

There is very little risk of weed dispersal associated with fisher restoration activities in MORA and NOCA. All actions associated with fisher restoration in MORA and NOCA would occur along main transportation routes: highways, NPS roads, lakes, or on trails, and no ground disturbance is proposed under this plan that could expose vulnerable soil to seed from invasive plants. Furthermore, all best management practices associated with invasive weed dispersal in MORA and NOCA (such as cleaning check boots, backpacks, and other equipment prior to entering the backcountry) would be adhered to during implementation. It is also important to note that both MORA and NOCA have an active invasive plant management program that is overseen by an Exotic Plant Management Specialist. Due to the low risk of the spread of invasive plants under this plan and the ongoing management actions within the parks to address non-native invasive species, there is no need to include a component in the alternatives to address noxious weeds.

Impacts

Concern 12: The EA may have misstated the forces effecting lynx populations in the Okanagon areas. I believe that there have not been any influences on lynx populations other than habitat change from fire.

Representative Comments:

"The BA for the reintroduction looks good...You may not have had access to the revised lynx conservation assessment and strategy (2013) [which] provides an updated literature review of lynx research. The statement [that] the lynx population in the Okanogan zone has declined needs to be qualified with the effect of fire on habitat (see Koehler et al. 2008). I don't think there have been any influences on the (lynx) population other than habitat change. They will return as habitat develops for snowshoe hare."

NPS Response:

Please see the correction made to Appendix A in part 1 of this Errata.

Concern 13: Please address the possibility of unintentional consequences on noxious weed control activities caused by the proposed Fisher reintroduction.

Representative Comment:

"The proposed Fisher reintroduction is an activity that may have unintentional consequences on weed control activities... The possible closure to areas within the park to protect den sites should not include weed control activities. If weeds are left unchecked within a den area, they will soon spread to other areas...The possibility of fisher den sites impacting weed control activities on neighboring landowners must also be addressed."

NPS Response:

The NPS is aware that both the USFS and NPS engage in noxious weed control activities on public lands, and the EA acknowledges that "Given that fishers would likely inhabit USFS lands under this alternative, the USFS may apply seasonal restrictions on certain activities that have the potential to adversely impact fisher" (103). However, in the analysis of impacts to neighboring landowners in the EA, the NPS concluded that the likelihood of impacting any management activities on USFS (and NPS, for that matter) lands, is extremely low. "[T]he potential for and impact from any restriction would be largely reduced by fisher behavior and limited monitoring. Female fishers may move kits during the denning season, reducing the length of time seasonal restrictions would be needed in any one location, and do not use the same den site in consecutive years, reducing the potential to impact the same stand for multiple years in a row. Similarly, once the individual tracking device on a fisher fails (VHF radio-transmitters are projected to last approximately two years after the release), locations of denning fishers would generally be unknown, and the USFS would therefore be unlikely to place any seasonal restrictions tied to such activity on their

land. During and following the fisher reintroduction on the Olympic Peninsula, the USFS did not implement any restrictions on forestry activities, furthermore confirming the unlikelihood of this occurring (Happe, pers. comm., 2014b). Based on the above discussion, forestry activities on USFS lands could be adversely impacted long-term (i.e. so long as fisher are present and listed) by successful fisher restoration; however, any impacts to specific areas and individual landowners would be unlikely and negligible to moderate if they occurred, depending on the precise location of the known den and plans for timber harvesting in that location at the time.”

Concern 14: With limited funds available for park operations we are concerned that funds will be reallocated from other very important efforts, specifically noxious weed management, to the fisher reintroduction project.

Representative Comments:

“Already limited funding for noxious weed control activities must not be reallocated to further reintroduction efforts....With the known infestations of noxious weeds along the roads, trail heads, and camping areas, we are concerned about the further spread of these weeds, and if funding is reallocated to Fisher restoration activities, those concerns are elevated.”

NPS Response:

No dollars are being allocated away from invasive plant management projects to fund fisher restoration in the SW and NW Cascades. The majority of funding for invasive plant management at both MORA and NOCA is funded out of a very specific, Washington-based program for all exotic plant management teams within the NPS, whereas the NPS funding for fisher restoration would be awarded through a competitive service-wide call for special projects that would otherwise not be funded. These two pools of money do not directly compete with each other for federal dollars.

Public Involvement and Communication

Concern 15: Be sure to involve the public throughout this project. Seek out volunteers to keep costs low and increase public support and remain in touch with the public about the status of the fisher's recovery once reintroductions are completed.

Representative Comments:

“NPCA also supports opportunities to involve citizens in the reintroduction effort by participating in the public release of fishers in the parks, helping with monitoring camera stations, deploying and checking hair snare sites, locating fishers from the ground, identifying the location of den sites, and assessing den site characteristics after females have left the sites. These chances to be involved in the project will increase public support and interest in the recovery of fisher populations throughout the state.”

NPS Response:

The NPS has integrated citizen science into the selected alternative. As stated in the EA on page 35, “The NPS and WDFW would also seek opportunities and support to involve citizen science in the fisher reintroduction process. Opportunities would focus on fisher monitoring efforts and would include, but would not be limited to, assisting staff with deploying and monitoring hair-snare and camera stations, assisting field crews in locating fishers from the ground, identifying the location of den sites, and conducting follow-up measurements of den site characteristics after females have left the site. As the reintroduction program develops, opportunities could be expanded to include working with the NPS and WDFW outreach and education coordinators”.

Consultation and Coordination

Concern 16: Coordinate with other agencies - specifically the USFS and Washington State Department of Fish and Wildlife, and nonprofits, like Defenders of Wildlife and other environmentally conscious groups, to ensure that fisher recovery is successful.

Representative Comments:

"Defenders [of Wildlife] has provided funds to Conservation Northwest and Washington Department of Fish and Wildlife for direct use for this reintroduction and subsequent monitoring efforts. We hope to stay involved in these efforts. With positive results from reintroductions in the Olympic Peninsula and a healthy source of fisher in British Columbia, we feel comfortable supporting this fisher reintroduction."

NPS Response:

This project would not be possible without the financial, logistical, and expertise support of other agencies and organizations. Other agencies, such as WDFW and the US Fish and Wildlife Service, and non-profits like Conservation Northwest and Defenders of Wildlife have already supported or pledged time and/or money to support fisher restoration in the SW and NW Cascades. This project could not happen without that support.

Costs

Concern 17: Costs for reintroduction should be mitigated by using volunteers to assist with project implementation.

Representative Comment:

"My only concern is the cost of the program in terms of man hours, travel, gas, etc. I sometimes feel as if people who work in government live in a bubble, and they are out of touch with the common taxpaying citizen. All of these wonderful programs come from our taxes at some point. I would encourage the departments involved to rely on some volunteer assistance in some of the areas where help is needed."

NPS Response:

Working with volunteers has been incorporated within the selected alternative. "The NPS and WDFW would also seek opportunities and support to involve citizen science in the fisher reintroduction process. Opportunities would focus on fisher monitoring efforts and would include, but would not be limited to, assisting staff with deploying and monitoring hair-snare and camera stations, assisting field crews in locating fishers from the ground, identifying the location of den sites, and conducting follow-up measurements of den site characteristics after females have left the site. As the reintroduction program develops, opportunities could be expanded to include working with the NPS and WDFW outreach and education coordinators" (EA, page 35). All of these opportunities would help reduce the overall cost for implementation. The NPS is also partnering with a number of organizations, including WDFW, US Fish and Wildlife Service, and the non-profit, Conservation Northwest to cover expenditures associated with fisher restoration, and the NPS is seeking additional funds from support groups like Washington's National Park Fund.

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Appendix B: Final Minimum Requirements Decision Guide

ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER



MINIMUM REQUIREMENTS DECISION GUIDE WORKBOOK

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

-- The Wilderness Act of 1964

Project Title: Mount Rainier National Park and North Cascades National Park Service Complex Fisher Restoration Plan / Environmental Assessment

MRDG STEP 1

Determine if Administrative Action is Necessary

Description of the Situation

What is the situation that may prompt administrative action?

In accordance with the Wilderness Act of 1964, the Washington Parks Wilderness Act (1988) designated as wilderness approximately 216,855 acres (97 percent) of Mount Rainier National Park (MORA) as the Mount Rainier Wilderness and approximately 634,614 acres (94 percent) of North Cascades National Park Service Complex (NOCA) as the Stephen Mather Wilderness.

Since the designation of these wildernesses, the Washington Department of Fish and Wildlife (WDFW) has determined that the fisher (*Pekania pennanti*), a medium-sized carnivore in the weasel family, has been extirpated from its historic range throughout the State, including the Mount Rainier and Stephen Mather Wildernesses, due to the combined effects of over-trapping and habitat loss and fragmentation in low to mid-elevation coniferous forests (Aubry and Houston 1992, Lewis and Stinson 1998). This determination has been further confirmed by extensive surveys completed by WDFW, the National Park Service (NPS), and the U.S. Forest Service (USFS) (Lewis and Stinson 1998, Aubry and Lewis 2003, Hayes and Lewis 2006, Christophersen et al. 2005, Christophersen 2006, Reid et al. 2010). In light of this extirpation, the Washington Fish and Wildlife Commission listed the fisher as endangered in 1998, and due to the depleted status of the fisher throughout portions of its former range, including Washington, the U.S. Fish and Wildlife Service listed the West Coast Distinct Population Segment of the fisher as a federal candidate species in 2004 (USFWS 2004b).

In an effort to restore the fisher to its historic range in Washington State, WDFW is proposing to reintroduce fishers to the SW and NW Cascades, including MORA and the Mount Rainier Wilderness and NOCA and the Stephen Mather Wilderness, and monitor individual fishers once

reintroduced. While WDFW and the NPS are not considering reintroducing fishers directly in wilderness, it is assumed that fishers would travel to and through and establish home ranges within these wildernesses, thereby impacting wilderness character. Furthermore, because fishers would be present in wilderness, WDFW and the NPS are proposing to complete monitoring within both wildernesses in order to gather ample information to inform reintroductions in the following years of this proposed project (implement adaptive management) and evaluate success of the reintroductions in the SW and NW Cascades (see "Objectives" in chapter 1 of the Plan/EA).

Please see chapter 1 of the Plan/EA for more background on the fisher, its extirpation in the SW and NW Cascades, and plans to restore this species to its historic range.

Options Outside of Wilderness

Can action be taken outside of wilderness that adequately addresses the situation?

- ☐ YES **STOP – DO NOT TAKE ACTION IN WILDERNESS**
☒ NO **EXPLAIN AND COMPLETE STEP 1 OF THE MRDG**

Explain:

WDFW and the NPS are not proposing to reintroduce fishers directly in wilderness. However, it is assumed that fishers would travel to and through and establish home ranges in the Mount Rainier and Stephen Mather Wildernesses, and if present in either or both wildernesses, monitoring fishers within that wilderness would be necessary. As identified in chapter 1 of this Plan/EA, some of the primary objectives of this proposed action are to: 1) restore self-sustaining fisher populations that are capable of surviving and reproducing by natural means 2) protect and perpetuate the natural distribution and abundance of fishers throughout suitable habitat in MORA and NOCA, and 3) expand scientific understanding regarding habitat use, movement, reproduction and survival, and use such information to adaptively manage fisher restoration in the SW and NW Cascades. All of these objectives require monitoring to detect fishers in the parks/wildernesses, estimate the survival rate of reintroduced fishers, and determine the number of reproducing females and the number of fisher that establish home ranges. This monitoring cannot occur outside wilderness if fishers are located within the wilderness.

Criteria for Determining Necessity

Is action necessary to meet any of the criteria below?

A. Valid Existing Rights or Special Provisions of Wilderness Legislation

Is action necessary to satisfy valid existing rights or a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that requires action? Cite law and section.

- ☐ YES ☒ NO

Explain: This proposed action does not entail mineral access, water rights, rights-of-ways, or access to inholdings.

B. Requirements of Other Legislation

Is action necessary to meet the requirements of other federal laws? Cite law and section.

- ☒ YES ☐ NO

Explain: The Endangered Species Act of 1973 requires all federal agencies to use their authorities in furtherance of the purposes of the Endangered Species Act by carrying out programs for the conservation of endangered and threatened species (Section 7(a)).

C. Wilderness Character

Is action necessary to preserve one or more of the qualities of wilderness character, including: Untrammeled, Undeveloped, Natural, Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation, or Other Features of Value?

Untrammeled

☐ YES ☒ NO

Explain: The wilderness character of the Mount Rainier and Stephen Mather Wildernesses are already "trammed" due to the extirpation of the fisher; taking no action would have no additional impact to the "untrammeled" quality of wilderness character of either Wilderness.

Undeveloped

☐ YES ☒ NO

Explain: This proposal would not preserve the undeveloped quality of wilderness character in either the Mount Rainier or Stephen Mather Wilderness.

Natural

☒ YES ☐ NO

Explain: The fisher, native to the SW and NW Cascades (including MORA and NOCA), has been extirpated from the region since at least the early 1990s and is currently a stated-listed endangered species and federally-listed candidate species (federal listing is for the West Coast Distinct Population Segment [DPS] of the fisher). This extirpation not only threatens the overall strength and resiliency of the species, but it also has had a negative impact on the SW and NW Cascades ecosystems and the natural quality of the wilderness character of the Mount Rainier and Stephen Mather Wildernesses. This action would restore a significant aspect of the natural processes of ecological systems within the Mount Rainier and Stephen Mather Wildernesses to a state in which they are substantially free from the effects of modern civilization. This restoration is necessary to administer the area as wilderness.

Solitude or Primitive & Unconfined Recreation

☐ YES ☒ NO

Explain: Restoration of fisher is not necessary to preserve opportunities for solitude or primitive and unconfined recreation in either the Mount Rainier or Stephen Mather Wilderness.

Other Features of Value

☐ YES ☒ NO

Explain: Although this proposal would increase scientific understanding of the fisher and species reintroductions and would enhance educational opportunities for the public, this proposal is not *necessary* to preserve these or other features of value in either the Mount Rainier or Stephen Mather Wilderness.

Step 1 Decision

Is administrative action necessary in wilderness?

Decision Criteria

A. Existing Rights or Special Provisions ☐ YES ☒ NO

- | | | |
|--------------------------------------|---|--|
| B. Requirements of Other Legislation | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| C. Wilderness Character | | |
| Untrammeled | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| Undeveloped | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| Natural | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| Outstanding Opportunities | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| Other Features of Value | <input type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |

Is administrative action necessary in wilderness?

- ☒ YES **EXPLAIN AND PROCEED TO STEP 2 OF THE MRDG**
- ☐ NO **STOP – DO NOT TAKE ACTION IN WILDERNESS**

Explain:

The fisher, native to the SW and NW Cascades (including MORA and NOCA), has been extirpated from the region since at least the early 1990s and is currently a stated-listed endangered species and federally-listed candidate species (federal listing is for the West Coast Distinct Population Segment of the fisher). This extirpation threatens the overall strength and resiliency of the species and has had a negative impact on the SW and NW Cascades ecosystems, including the natural quality of wilderness character in both the Mount Rainier and Stephen Mather Wildernesses. Furthermore, successful reintroduction would not be feasible without monitoring to ensure that management actions are proceeding in such a way as to support the reproduction and establishment of fishers into the future and if not, to modify reintroduction efforts as needed. Because the restoration of fishers is necessary to restore this important aspect of the natural quality of these wilderness, actions to reintroduce (including monitoring) the fisher to the Mount Rainier and Stephen Mather Wildernesses are necessary to administer these areas as wilderness.

Application of the Wilderness Act and Endangered Species Act indicate that an action is needed to restore fisher to the Mount Rainier and Stephen Mather Wildernesses.

MRDG STEP 2

Determine the Minimum Activity

Other Direction

*Is there "special provisions" language in legislation (or other Congressional direction) that explicitly **allows** consideration of a use otherwise prohibited by Section 4(c)? **AND/OR** Has the issue been*

addressed in agency policy, management plans, species recovery plans, or agreements with other agencies or partners?

☒ YES **DESCRIBE DOCUMENTS & DIRECTION BELOW**

☐ NO **SKIP AHEAD TO COMPONENTS OF THE ACTION BELOW**

Describe Documents & Direction:

NPS *Management Policies 2006* direct 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:

- “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”;
- “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”;
- “The genetic type used in restoration most nearly approximates the extirpated genetic type”;
- “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”; and
- “Potential impacts upon park management and use have been carefully considered” (NPS 2006b, sec. 4.4.2.2).

When restoring these species, NPS *Management Policies 2006* 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 2006b, Section 4.1.5).

The Wilderness Management Plan (1989) for the Stephen Mather Wilderness establishes standards for minimal tool, 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.”

The Wilderness Management Plan (1989) for the Mount Rainier Wilderness establishes standards for minimal tool as well, such as, “Fixed wing aircraft are used in compliance with FAA regulations for administrative purposes such as for resource management, search and rescue and fire management operations.”

The *Washington State Recovery Plan* for the fisher concludes that reintroduction is the best way to restore fishers in the SW and NW Cascades recovery areas. Based on this plan, WDFW wrote an *Implementation Plan for Reintroducing Fishers to the Cascade Mountain Range in Washington* that outlines steps to reintroduce fisher to these two recovery areas (which includes MORA and NOCA) and monitor fishers for at least three years following reintroduction.

Components of the Action

What are the discrete components or phases of the action?

Component 1:	Transport and release fishers outside of wilderness
Component 2:	Tracking device placed on released fishers (founding population only)
Component 3:	Transportation of personnel to track founding population
Component 4:	Transportation of personnel and tools to install temporary monitoring stations
Component 5:	Temporary monitoring stations
Component 6:	Condition of site after project
Component 7:	Scientific understanding and educational opportunities

Alternative 1

VHF Collars and Aerial Telemetry; Hair-Snares and Remote Camera Stations Installed by Foot

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?

In this alternative, all fishers reintroduced to the SW and NW Cascades would be equipped with a **VHF radio-transmitter collar** and marked with a passive integrated transponder (PIT) tag prior to their release. Aerial telemetry, based on VHF radio transmitters, with **fixed wing-aircraft** would then be used to monitor fishers during the reintroduction. For a maximum of two years following each release (years 1-3 for each reintroduction), **flights would occur weekly**, weather permitting, in areas where fishers are expected to occur (i.e. above suitable fisher habitat) (see Figures 2.1 and 2.2 in Fisher Plan/EA). When fisher are not detected, flights would be as high as possible (while still close enough to obtain a signal), but aircraft would fly as low as 333 feet above the canopy or 500 feet above ground limit (whichever is higher) when fishers are detected in order to tract the signal. Whenever possible (weather permitting), flights would occur between Monday and Thursday. The number of locations obtained for each fisher would be limited by 1) the lifespan of radio-transmitters, 2) suitable weather conditions for flying, and 3) available funding for telemetry flights. Given potential limitations on data collection, the objective would be to get at least one location per week for individual fishers, with a maximum of five flights per month. Where access allows, telemetry would be completed by foot and mortalities and suspected den sites would be investigated on foot to collect the carcass or verify denning and reproduction. VHF collars are expected to last two years. Flights would occur only so long as resource staff obtain signals from the VHF transmitters. All cast collars and collars from mortalities would be retrieved via foot access where reasonable access allows.

During fisher release years and one year post-release, **temporary remote camera stations** would be placed in the backcountry **via foot** to detect repeated female visitation at suspected den sites and the presence of kits. These stations would be placed in areas with little visitor use and would be out-of-site for visitors.

Because of these extensive monitoring procedures, WDFW and NPS staff would likely have ample information to adaptively manage fisher reintroductions and respond to any issues that arise in reintroduction efforts in order to **ensure greater success** with the project (i.e. meet the objectives of the proposed action). These monitoring procedures would allow staff to estimate survival rate, the number of fisher that establish a home range, and the number of reproducing females in order to determine if the restored fisher populations are capable of surviving and reproducing by natural means (first objective). They would also be able to detect fishers in MORA and NOCA in order to determine if fishers are distributed and abundant in these parks (third objective), and this monitoring would **expand scientific understanding** regarding fisher habitat use, movement, reproduction and survival (fourth objective).

Component Activities

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

<u>Component of the Action</u>		Activity for this Alternative
1	Release fishers outside of wilderness	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)
2	Tracking device placed on released fishers (founding population only)	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades
3	Transportation of personnel to track founding population	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected
4	Transportation of personnel and tools to install temporary monitoring stations	Personnel and tools would be transported by foot
5	Temporary monitoring stations	Remote camera stations would be installed at areas of suspected denning activity
6	Condition of site after project	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)
7	Scientific understanding and educational opportunities	Scientific understanding would be improved. Educational opportunities would be enhanced.

Measuring Impacts

Because this proposal includes two reintroductions in two wildernesses: the Mount Rainier Wilderness in MORA and the Stephen Mather Wilderness in NOCA, impacts were analyzed for these wildernesses separately (see tables below).

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

Untrammelled

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	2	NE	

Untrammelled Total Rating	-4
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Explain:

By reintroducing fisher in the SW and NW Cascades, when they have been extirpated by human actions, the NPS would be actively managing the wilderness through which and in which these animals are expected to travel and establish homeranges. This activity, along with the placement of tracking collars on fishers in wilderness, negatively impacts the untrammelled quality of wilderness character.

Undeveloped

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	3	3	NE	
<u>Undeveloped Total Rating</u>		-6					

Explain:

VHF radio-transmitter collars (160 total collars), fixed wing flights (During the OLYM fisher reintroduction, approximately 192.9 to 254.4 hours of fixed-wing flights occurred annually over the park and surrounding lands in association with fisher monitoring efforts – less than half of these hours were over the park), and placing temporary installations in the wilderness would have a short-term negative impact on the undeveloped quality of wilderness character.

Natural

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		2	2	0	0	NE	
<u>Natural Total Rating</u>		4					

Explain:

In ensuring successful restoration of an extirpated, state-listed endangered mesocarnivore through reintroductions, monitoring, and adaptively management, this action would have a moderate, long-term, beneficial impact on the naturalness of the Mount Rainier and Stephen Mather Wildernesses because it would improve the processes and biodiversity of these wilderness ecosystems by completing the native predator guild within these wildernesses, which would have positive cascading effects on other species present.

Solitude or Primitive & Unconfined Recreation

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		3	3	4	4	NE	
<u>Solitude or Primitive and Unconfined Recreation Total Rating</u>		-2					

Explain:

Actual release activities have the potential to impact winter visitors to the wilderness as sounds from transportation to release sites and actions associated with releases may travel into the wilderness. However, as visitation is low in both wildernesses during the winter when releases are

scheduled to occur (particularly in NOCA), it is more likely that visitors who have the opportunity to participate in a release would benefit to a greater extent and more substantially than those who may be impacted by transient noises associated with release activities (component 1). Similarly, knowing fishers have been restored to the wilderness, having the slim, though real, chance to see a fisher in the wild and in its native habitat, and having enhanced opportunities to learn about fisher reintroduction would have a long-term beneficial impact on opportunities for primitive and unconfined recreation for both visitors to the wilderness and non-visitors alike (components 6 and 7). While the increased likelihood of seeing a fisher in the wild would be a long-term beneficial impact to the wilderness character of both the Mount Rainier and Stephen Mather Wildernesses, if a visitor happened to see a fisher collared (only the founding population), it would diminish this beneficial impact. Because fishers have large home ranges and tend to be dispersed throughout remote areas, the chances of seeing a fisher in the backcountry, particularly along traveled trails and in campgrounds, would likely be extremely low.

Seeing NPS personnel in the backcountry, finding a remote camera station (through rare, this has happened), and seeing/hearing fixed-wing aircraft associated monitoring would have a short-term negative impact on visitors' opportunities for solitude in the wilderness.

Other Features of Value

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		1	1	0	0	NE	
<u>Other Features of Value Total Rating</u>		2					

Explain:

The monitoring activities that would accompany reintroduction would inform future reintroduction efforts of native species – a long-term benefit to scientific understanding of these processes. This information could also be used to enhance education and outreach in and around both wildernesses, a beneficial impact.

Other Criteria

What is the effect of each component activity on other comparison criteria? What mitigation measures will be taken?

Maintaining Traditional Skills

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Maintaining Traditional Skills Total Rating</u>		0					

Explain:

No action in this alternative helps to maintain proficiency in the use of primitive and traditional skills, non-motorized tools, and non-mechanical travel methods.

Special Provisions

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Special Provisions Total Rating</u>		0					

Explain:

No special provisions are impacted by this alternative.

Economics & Time Constraints

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		1	1	6	6	NE	
<u>Economics & Time Constraints Total Rating</u>		-10					

Explain:

****Impacts under economic and time constraints are in comparison to other alternatives.****

Reintroducing a total of 160 fishers to the SW and NW Cascades would represent a large portion of the funding for this project and is time-sensitive (ideally fisher would be released in the late fall, early winter to give females time to establish dens). As this is twice the cost and work load of Alternative 4, this is evaluated as a negative impact on economics and time constraints. Similarly, this alternative would involve the installation of more camera stations (and associated staff time) than Alternative 4; hence the evaluation of a negative impact for these project components.

While VHF radio-transmitter collars cost less than satellite collars (Alternative 3)(\$200 vs. \$2000 for satellite collars), they could compromise monitoring as they are more likely to fall off than implanted VHF radio-transmitters (Alternative 2) and don't provide the same amount of data as satellite collars (Alternative 3); hence the evaluation of a negative impact for this project component.

Weekly aerial telemetry flights (associated with VHF radio-transmitters), while providing ample monitoring results, would also cost more than using satellite collars (Alternative 3) which require less flights; hence the evaluation of a negative impact for this project component.

In meeting the objectives of restoration in *both* the SW and NW Cascades (associated with component 6), this alternative would ensure greatest efficiency of fisher restoration in that one reintroduction would immediately follow the other reintroduction – taking advantage of the infrastructure and staff knowledge created and developed within the first reintroduction. This alternative would also double the amount of scientific information on reintroductions (in comparison to Alternative 4) which would improve the efficiency of future reintroduction efforts elsewhere. However, less information would be gathered than that available when using satellite

collars; hence an evaluation of a negative impact.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What mitigation measures will be taken?

Safety of Visitors & Workers

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF (radio-transmitter) collar would be placed on all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	2	NE	
<u>Safety of Visitors & Workers Total Rating</u>		-4					

Explain:

Fixed wing aircraft flights are a high risk activity and pose a threat to staff safety. Similarly, given the terrain of both wildernesses and the remote locations that fishers are expected to inhabit, traveling by foot to den-sites, etc. is also a risky activity that demands that considerations for human health and safety be made during trip planning.

Summary Ratings for Alternative 1

<u>Wilderness Character</u>	
Untrammeled	-4
Undeveloped	-6
Natural	4
Solitude or Primitive & Unconfined Recreation	-2
Other Features of Value	2
Wilderness Character Summary Rating	-6

<u>Other Criteria</u>	
Maintaining Traditional Skills	0
Special Provisions	0

Economics & Time Constraints	-10
Other Criteria Summary Rating	-10

<u>Safety</u>	
Safety of Visitors & Workers	-4
Safety Summary Rating	-4

Alternative 2

Implanted VHF Transmitters & Aerial Telemetry; Hair-Snares & Remote Camera Stations Installed by Foot

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?

In this alternative, all fishers reintroduced to the SW and NW Cascades would be equipped with a **surgically-implanted VHF radio-transmitter** and marked with a passive integrated transponder (PIT) tag prior to their release. Aerial telemetry, based on VHF radio transmitters, with **fixed wing-aircraft** would then be used to monitor fishers during the reintroduction. For a maximum of two years following each release (years 1-3 for each reintroduction), **flights would occur weekly**, weather permitting, in areas where fisher are expected to occur (i.e. above suitable fisher habitat) (see Figures 2.1 and 2.2 in Fisher Plan/EA). When fisher are not detected, flights would be as high as possible (while still close enough to obtain a signal), but aircraft would fly as low as 333 feet above the canopy or 500 feet above ground limit (whichever is higher) when fishers are detected in order to track the signal. Whenever possible (weather permitting), flights would occur between Monday and Thursday. The number of locations obtained for each fisher would be limited by 1) the lifespan of radio-transmitters, 2) suitable weather conditions for flying, and 3) available funding for telemetry flights. Given potential limitations on data collection, the objective would be to get at least one location per week for individual fishers, with a maximum of five flights per month. Where access allows, telemetry would be completed by foot and mortalities and suspected den sites would be investigated on foot to collect the carcass or verify denning and reproduction. VHF implants are expected to last two years, maximum, but would remain implanted in the fisher throughout its life. These transmitters would likely never be located once the fisher dies. Flights would occur only so long as resource staff obtain signals from the VHF transmitters.

During fisher release years and one year post-release, **temporary remote camera stations** would be placed in the backcountry **via foot** to detect repeated female visitation at suspected den sites and the presence of kits. These stations would be placed in areas with little visitor use and would be out-of-site for visitors.

Because of these extensive monitoring procedures, WDFW and NPS staff should have ample information to adaptively manage fisher reintroductions and respond to any issues that arise in reintroduction efforts in order to **ensure greater success with the project** (i.e. meet the objectives of the proposed action). These monitoring procedures would allow staff to estimate survival rate, the number of fisher that establish a home range, and the number of reproducing females in order to determine if the restored fisher populations are capable of surviving and reproducing by natural means (first objective). They would also be able to detect fishers in MORA and NOCA in order to determine if fishers are distributed and abundant in these parks (third objective), and this monitoring would **expand scientific understanding** regarding fisher habitat use, movement, reproduction and survival (fourth objective).

Component Activities

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

Component of the Action		Activity for this Alternative
1	Release fishers outside of wilderness	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)
2	Tracking device placed on released fishers (founding population only)	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades
3	Transportation of personnel to track founding population	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected
4	Transportation of personnel and tools to install temporary monitoring stations	Personnel and tools would be transported by foot
5	Temporary monitoring stations	Remote camera stations would be installed at areas of suspected denning activity
6	Condition of site after project	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)
7	Scientific understanding and enhanced educational opportunities	Scientific understanding would be improved. Educational opportunities would be enhanced.

Measuring Impacts

Because this proposal includes two reintroductions in two wildernesses: the Mount Rainier Wilderness in MORA and the Stephen Mather Wilderness in NOCA, impacts were analyzed for these wildernesses separately (see tables below).

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

Untrammeled

Component Activity for this Alternative		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	2	NE	

<u>Untrammeled Total Rating</u>	-4
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Explain:

By reintroducing fisher in the SW and NW Cascades, when they have been extirpated by human actions, the NPS would be actively managing the wilderness through which and in which these animals are expected to travel and establish homeranges. This activity, along with implanting tracking devices in fishers in wilderness, negatively impacts the untrammeled quality of wilderness character.

Undeveloped

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	2	NE	
<u>Undeveloped Total Rating</u>		-4					

Explain:

Fixed wing flights and placing temporary installations in the wilderness would have a short-term negative impact on the undeveloped quality of wilderness character.

Natural

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		2	2	0	0	NE	
<u>Natural Total Rating</u>		4					

Explain:

In ensuring successful restoration of an extirpated, state-listed endangered mesocarnivore through reintroductions, monitoring, and adaptively management, this action would have a moderate, long-term, beneficial impact on the naturalness of the Mount Rainier and Stephen Mather Wildernesses because it would improve the processes and biodiversity of these wilderness ecosystems by completing the native predator guild within these wildernesses which would have positive cascading effects on other species present.

Solitude or Primitive & Unconfined Recreation

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		3	3	3	3	NE	
<u>Solitude or Primitive and Unconfined Recreation Total Rating</u>		0					

Explain:

Actual release activities have the potential to impact winter visitors to the wilderness as sounds from transportation to release sites and actions associated with releases may travel into the wilderness. However, as visitation is low in both wildernesses during the winter when releases are

scheduled to occur (particularly in NOCA), it is more likely that visitors who have the opportunity to participate in a release would benefit to a greater extent and more substantially than those who may be impacted by transient noises associated with release activities (component 1). Similarly, knowing fishers have been restored to the wilderness, having the slim, though real, chance to see a fisher in the wild and in its native habitat, and having enhanced opportunities to learn about fisher reintroduction would have a long-term beneficial impact on opportunities for primitive and unconfined recreation for both visitors to the wilderness and non-visitors alike (components 6 and 7). Because fishers have large homeranges and tend to be dispersed throughout remote areas, the chances of seeing a fisher in the backcountry, particularly along traveled trails and in campgrounds, would likely be extremely low.

Seeing NPS personnel in the backcountry, finding a remote camera station (through rare, this has happened), and seeing/hearing fixed-wing aircraft associated monitoring would have a short-term negative impact on visitors' opportunities for solitude in the wilderness.

Other Features of Value

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		1	1	0	0	NE	
<u>Other Features of Value Total Rating</u>		2					

Explain:

The monitoring activities that would accompany reintroduction would inform future reintroduction efforts of native species – a long-term benefit to scientific understanding of these processes. This information could also be used to enhance education and outreach in and around both wildernesses, a beneficial impact.

Other Criteria

What is the effect of each component activity on other comparison criteria? What mitigation measures will be taken?

Maintaining Traditional Skills

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA

1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Maintaining Traditional Skills Total Rating</u>		0					

Explain:

No action in this alternative helps to maintain proficiency in the use of primitive and traditional skills, non-motorized tools, and non-mechanical travel methods.

Special Provisions

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Special Provisions Total Rating</u>		0					

Explain:

No special provisions are impacted by this alternative.

Economics & Time Constraints

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		2	2	5	5	NE	
<u>Economics & Time Constraints Total Rating</u>		-6					

Explain:

****Impacts under economic and time constraints are in comparison to other alternatives.****

Reintroducing a total of 160 fishers to the SW and NW Cascades would represent a large portion of the funding for this project and is time-sensitive (ideally fisher would be released in the late fall, early winter to give females time to establish dens). As this is twice the cost and work load of Alternative 4, this is evaluated as a negative impact on economics and time constraints. Similarly, this alternative would involve the installation of more camera stations (and associated staff time) than Alternative 4; hence the evaluation of a negative impact for these project components.

Implanted VHF radio-transmitters cost less than satellite collars (Alternative 3) (\$200 in comparison to \$2000) and are more durable than either collar option considered in Alternatives 1 and 3; hence the evaluation of a positive impact.

Weekly aerial telemetry flights (associated with VHF radio-transmitters), while providing ample monitoring results, would also cost more than using satellite collars (Alternative 3) which require less flights; hence the evaluation of a negative effect.

In meeting the objectives of restoration in *both* the SW and NW Cascades (associated with component 6), this alternative would ensure greatest efficiency of fisher restoration in that one reintroduction would immediately follow the other reintroduction – taking advantage of the infrastructure and staff knowledge created and developed within the first reintroduction. This alternative would also double the amount of scientific information on reintroductions (in comparison to Alternative 4) which would improve the efficiency of future reintroduction efforts elsewhere. However, less information would be gathered than that available when using satellite collars; hence an evaluation of a negative impact.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What mitigation measures will be taken?

Safety of Visitors & Workers

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	A VHF radio-transmitter would be implanted in all fishers reintroduced in the Cascades	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	2	NE	
<u>Safety of Visitors & Workers Total Rating</u>		-4					

Explain:

Fixed wing aircraft flights are a high risk activity and pose a threat to staff safety. Similarly, given the terrain of both wildernesses and the remote locations that fishers are expected to inhabit, traveling by foot to den-sites, etc. is also a risky activity that demands that considerations for human health and safety be made during trip planning.

Summary Ratings for Alternative 2

<u>Wilderness Character</u>	
Untrammeled	-4
Undeveloped	-4
Natural	4
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	2
<u>Wilderness Character Summary Rating</u>	-2
<u>Other Criteria</u>	
Maintaining Traditional Skills	0

Special Provisions	0
Economics & Time Constraints	-6
Other Criteria Summary Rating	-6

<u>Safety</u>	
Safety of Visitors & Workers	-4
Safety Summary Rating	-4

Alternative 3

Satellite Collars Tested; Hair-Snares & Remote Camera Stations Installed by Foot

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?

In this alternative, most fishers reintroduced to the SW and NW Cascades would be equipped with a **surgically-implanted VHF radio-transmitter** and marked with a passive integrated transponder (PIT) tag prior to their release. However, **satellite collars** (which do not require as many flights as radio-telemetry) would also be used on a trial basis, starting with a few males in the first year of reintroductions, and increasingly used if found to be effective (little impact to fisher, light enough for females to carry, good data collection, few instances of collars falling off animals, extended life of collar, etc.). Aerial telemetry with **fixed wing-aircraft** would be used to monitor fishers with VHF transmitters, and satellite data would be collected off site for those fishers with satellite collars. For a maximum of two years following each release (years 1-3 for each reintroduction), flights would occur weekly (maximum of five flights per month), weather permitting, in areas where fishers are expected to occur (i.e. above suitable fisher habitat in areas where fishers with VHF transmitters are released) (see Figures 2.1 and 2.2 in Fisher Plan/EA). When fisher are not detected, flights would be as high as possible (while still close enough to obtain a signal), but aircraft would fly as low as 333 feet above the canopy or 500 feet above ground limit (whichever is higher) when fishers are detected in order to tract the signal. Whenever possible (weather permitting), flights would occur between Monday and Thursday, with a maximum of five flights per month. Where access allows, telemetry would be completed by foot and mortalities and suspected den sites would be investigated on foot to collect the carcass or verify denning and reproduction. VHF implants are expected to last two years, maximum, but would remain implanted in the fisher throughout its life (these transmitters would likely never be located once the fisher dies). Flights would occur only so long as resource staff obtain signals from the VHF transmitters. Satellite collars are expected to last two years. All cast collars and collars from mortalities would be retrieved via foot access where reasonable access allows.

During fisher release years and one year post-release, **temporary remote camera stations** would be placed in the backcountry **via foot** to detect repeated female visitation at suspected den sites and the presence of kits. These stations would be placed in areas with little visitor use and would be out-of-site for visitors.

Because of these extensive monitoring procedures, WDFW and NPS staff should have ample information to adaptively manage fisher reintroductions and respond to any issues that arise in reintroduction efforts in order to **ensure greater success with the project** (i.e. meet the objectives of the proposed action). These monitoring procedures would allow staff to estimate survival rate, the number of fisher that establish a home range, and the number of reproducing females in order to determine if the restored fisher populations are capable of surviving and reproducing by natural means (first objective). They would also be able to detect fishers in MORA and NOCA in order to determine if fishers are distributed and abundant in these parks (third objective), and this monitoring would **expand scientific understanding** regarding fisher habitat use, movement, reproduction and survival (fourth objective).

Component Activities

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

Component of the Action		Activity for this Alternative
1	Release fishers outside of wilderness	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)
2	Tracking device placed on released fishers (founding population only)	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested
3	Transportation of personnel to track founding population	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected
4	Transportation of personnel and tools to install temporary monitoring stations	Personnel and tools would be transported by foot
5	Temporary monitoring stations	Remote camera stations would be installed at areas of suspected denning activity
6	Condition of site after project	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)
7	Scientific understanding and enhanced educational opportunities	Scientific understanding would be improved. Educational opportunities would be enhanced.

Measuring Impacts

Because this proposal includes two reintroductions in two wildernesses: the Mount Rainier Wilderness in MORA and the Stephen Mather Wilderness in NOCA, impacts were analyzed for these wildernesses separately (see tables below).

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

Untrammelled

Component Activity for this Alternative		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	2	NE	

<u>Untrammelled Total Rating</u>	-4
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Explain:

By reintroducing fisher in the SW and NW Cascades, when they have been extirpated by human actions, the NPS would be actively managing the wilderness through which and in which these animals are expected to travel and establish homeranges. This activity, along with implanting tracking devices in or placing tracking collars on fishers in wilderness, negatively impacts the untrammelled quality of wilderness character.

Undeveloped

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	3	3	NE	
<u>Undeveloped Total Rating</u>		-6					

Explain:

Satellite collars (fewer collars used than Alternative 1; initially five and possibly more, maximum would be 125 collars though likely far less), fixed wing flights, and placing temporary installations in the wilderness would have a short-term negative impact on the undeveloped quality of wilderness character. This alternative would require slightly less flights than Alternatives 1 and 2 due to the use of satellite collars on some fishers, which require less flights.

Natural

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		2	2	0	0	NE	
<u>Natural Total Rating</u>		4					

Explain:

In ensuring successful restoration of an extirpated, state-listed endangered mesocarnivore through reintroductions, monitoring, and adaptively management, this action would have a moderate to major, long-term, beneficial impact on the naturalness of the Mount Rainier and Stephen Mather Wildernesses because it would improve the processes and biodiversity of these wilderness ecosystems by completing the native predator guild within these wildernesses which would have positive cascading effects on other species present.

Solitude or Primitive & Unconfined Recreation

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		3	3	4	4	NE	
<u>Solitude or Primitive and Unconfined Recreation Total Rating</u>		-2					

Explain:

Actual release activities have the potential to impact winter visitors to the wilderness as sounds from transportation to release sites and actions associated with releases may travel into the wilderness. However, as visitation is low in both wildernesses during the winter when releases are

scheduled to occur (particularly in NOCA), it is more likely that visitors who have the opportunity to participate in a release would benefit to a greater extent and more substantially than those who may be impacted by transient noises associated with the releases (component 1). Similarly, knowing fishers have been restored to the wilderness, having the slim, though real, chance to see a fisher in the wild and in its native habitat, and having enhanced opportunities to learn about fisher reintroduction would have a long-term beneficial impact on opportunities for primitive and unconfined recreation for both visitors to the wilderness and non-visitors alike (components 6 and 7). While the increased likelihood of seeing a fisher in the wild would be a long-term beneficial impact to the wilderness character of both the Mount Rainier and Stephen Mather Wildernesses, if a visitor happened to see a fisher collared (only the founding population), it would diminish this beneficial impact (though far fewer collars used than Alternative 1). Because fishers have large homeranges and tend to be dispersed throughout remote areas, the chances of seeing a fisher in the backcountry, particularly along traveled trails and in campgrounds, would likely be extremely low.

Seeing NPS personnel in the backcountry, finding a remote camera station (through rare, this has happened), and seeing/hearing fixed-wing aircraft associated monitoring would have a short-term negative impact on visitors' opportunities for solitude in the wilderness. This alternative would require slightly less flights than Alternatives 1 and 2 due to the use of satellite collars on some fishers.

Other Features of Value

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		1	1	0	0	NE	
<u>Other Features of Value Total Rating</u>		2					

Explain:

The monitoring activities that would accompany reintroduction would inform future reintroduction efforts of native species – a long-term benefit to scientific understanding of these processes. This information could also be used to enhance education and outreach in and around both wildernesses, a beneficial impact. The experimental use of emerging technology, such as satellite collars, would also enhance future restoration and species monitoring efforts and would provide even more data than obtained in Alternatives 1 and 2 due to the enhanced capabilities of satellite collars.

Other Criteria

What is the effect of each component activity on other comparison criteria? What mitigation measures will be taken?

Maintaining Traditional Skills

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Maintaining Traditional Skills Total Rating</u>		0					

Explain:

No action in this alternative helps to maintain proficiency in the use of primitive and traditional skills, non-motorized tools, and non-mechanical travel methods.

Special Provisions

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Special Provisions Total Rating</u>		0					

Explain:

No special provisions are impacted by this alternative.

Economics & Time Constraints

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		3	3	4	4	NE	
<u>Economics & Time Constraints Total Rating</u>		-2					

Explain:

****Impacts under economic and time constraints are in comparison to other alternatives.****

Reintroducing a total of 160 fishers to the SW and NW Cascades would represent a large portion of the funding for this project and is time-sensitive (ideally fisher would be released in the late fall, early winter to give females time to establish dens). As this is twice the cost and work load of Alternative 4, this is evaluated as a negative impact on economics and time constraints. Similarly, this alternative would involve the installation of more camera stations (and associated staff time) than Alternative 4; hence the evaluation of a negative impact for these project components.

Although satellite collars provide more data and require less flights than VHF radio-transmitters (Alternatives 1 and 2), they cost considerably more (\$2,000 compared to \$200 per device) and require additional administrative/logistical support because two devices and associated monitoring procedures would be used (added complexity) and the alternative would entail a pilot project that requires administrative oversight, an overall negative impact in comparison to other alternatives. However, aerial telemetry would be reduced under this alternative, in comparison to Alternatives 2 and 3; hence the evaluation of a positive impact.

In meeting the objectives of restoration in *both* the SW and NW Cascades (associated with component 6), this alternative would ensure greatest efficiency of fisher restoration in that one reintroduction would immediately follow the other reintroduction – taking advantage of the infrastructure and staff knowledge created and developed within the first reintroduction. This alternative would also double the amount of scientific information on reintroductions (in comparison to Alternative 4) and improve the quality of information gathered due to the use of satellite collars (in comparison to Alternatives 1 and 2); hence an evaluation of a positive impact.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What mitigation measures will be taken?

Safety of Visitors & Workers

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	80 fishers would be released outside of wilderness in both the SW and NW Cascades (160 total)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	NPS would have ample information to ensure all objectives are met (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be improved. Educational opportunities would be enhanced.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	2	NE	
<u>Safety of Visitors & Workers Total Rating</u>		-4					

Explain:

Fixed wing aircraft flights are a high risk activity and pose a threat to staff safety; however, this alternative may require slightly less flights than Alternatives 1 and 2 due to the use of satellite collars on some fishers. Given the terrain of both wildernesses and the remote locations that fishers are expected to inhabit, traveling by foot to den-sites, etc. is also a risky activity that demands that considerations for human health and safety be made during trip planning.

Summary Ratings for Alternative 3

<u>Wilderness Character</u>	
Untrammeled	-4
Undeveloped	-6

Natural	4
Solitude or Primitive & Unconfined Recreation	-2
Other Features of Value	2
Wilderness Character Summary Rating	-6

<u>Other Criteria</u>	
Maintaining Traditional Skills	0
Special Provisions	0
Economics & Time Constraints	-2
Other Criteria Summary Rating	-2

<u>Safety</u>	
Safety of Visitors & Workers	-4
Safety Summary Rating	-4

Alternative 4

No Action: No NPS Fisher Reintroductions in MORA and NOCA; Limited monitoring in MORA tied to WDFW actions

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?

Under this alternative, the NPS would not partner with WDFW to restore fishers into MORA or NOCA. No NPS funding would be allocated to fisher restoration, and **no fisher reintroductions would occur on NPS lands.**

However, the **State of Washington would proceed with fisher restoration in the SW Cascades**, outside of MORA, as outlined in WDFW's *Implementation Plan for Reintroducing Fishers to the Cascade Mountain Range in Washington* (available at wdfw.wa.gov/publications/01556/). It is assumed under this alternative that fishers would become distributed throughout the SW Cascades and may become established in MORA and the Mount Rainier Wilderness over time but would not be restored to the NW Cascades.

While it is unknown how soon fishers would immigrate to MORA and the Mount Rainier Wilderness, it is assumed that at least **some fishers equipped with tracking devices (mix of VHF radio-transmitters and satellite collars on founding population only) would still travel to and through and establish homeranges in the Mount Rainier Wilderness**, albeit delayed in comparison to Alternatives 1-3 as fishers would not be directly reintroduced into MORA. Therefore some **aerial telemetry with fixed wing-aircraft** would still be used by WDFW to monitor fishers during the reintroductions. Although limited due to less trackable fishers present in the Mount Rainier Wilderness, flights would occur weekly, weather permitting, in areas where fisher are expected to occur (i.e. above suitable fisher habitat) (see Figures 2.1 and 2.2 in Fisher Plan/EA). When fisher are not detected, flights would be as high as possible (while still close enough to obtain a signal), but aircraft would fly as low as 333 feet above the canopy or 500 feet above ground limit (whichever is higher) when fishers are detected in order to tract the signal. The number of locations obtained for each fisher would be limited by 1) the lifespan of radio-transmitters, 2) suitable weather conditions for flying, and 3) available funding for telemetry flights. Given potential limitations on data collection, the objective would be to get at least one location per week for individual fishers, with a maximum of five flights per month. Where access allows, telemetry would be completed by foot and mortalities and suspected den sites would be investigated on foot to collect the carcass or verify denning and reproduction. VHF implants are expected to last two years, maximum, but would remain implanted in the fisher throughout its life. These transmitters would likely never be located once the fisher dies. Flights would occur only so long as resource staff obtain signals from the VHF transmitters in the Mount Rainier Wilderness. Satellite collars are expected to last two years as well.

During fisher release years and one year post-release, the NPS would likely work with WDFW to place **temporary remote camera stations** in the backcountry of the Mount Rainier Wilderness **via foot** to detect repeated female visitation at suspected den sites and the presence of kits. These stations would be placed in areas with little visitor use and would be out-of-site for visitors. It assumed that there would be less of these stations needed in comparison to the other alternatives because less fishers would be present in MORA immediately following WDFW reintroduction in the SW Cascades under this alternative.

Because of the NPS' limited involvement in fisher reintroduction under this alternative and the lack of any reintroduction in the NW Cascades, fishers would not be restored to the Stephen Mather

Wilderness, the level of scientific understanding would be minimal in comparison to other alternatives (one full reintroduction; not two), and the number of educational opportunities tied to fisher reintroduction would be limited to MORA only.

There would be no action within the Stephen Mather Wilderness under this alternative.

Component Activities

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

Component of the Action		Activity for this Alternative
1	Release fishers outside of wilderness	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.
2	Tracking device placed on released fishers (founding population only)	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested
3	Transportation of personnel to track founding population	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)
4	Transportation of personnel and tools to install temporary monitoring stations	Personnel and tools would be transported by foot (limited)
5	Temporary monitoring stations	Remote camera stations would be installed at areas of suspected denning activity (limited)
6	Condition of site after project	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)
7	Scientific understanding and enhanced educational opportunities	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only

Measuring Impacts

Because the other alternatives in this MRDG include two reintroductions in two wildernesses: the Mount Rainier Wilderness in MORA and the Stephen Mather Wilderness in NOCA, impacts were analyzed for these wildernesses separately under this alternative as well in order to be able to compare impacts to the wildernesses from all the alternatives (see tables below).

Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

Untrammelled

Component Activity for this Alternative	Positive		Negative		No Effect	
	MORA	NOCA	MORA	NOCA	MORA	NOCA

1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	0	NE	
<u>Untrammeled Total Rating</u>		-2					

Explain:

By reintroducing fisher in the SW Cascades, when they have been extirpated by human actions, WDFW would be actively managing the Mount Rainier Wilderness through which and in which these animals are expected to travel and establish homeranges. This activity, along with implanting tracking devices in or placing tracking collars on fishers in wilderness, negatively impacts the untrammelled quality of wilderness character. This trammeling of wilderness character would be less than Alternatives 1-3 as 1) no fishers would be reintroduced in close proximity to the Mount Rainier Wilderness, and 2) fisher immigration to the wilderness would like be delayed in comparison to the other alternatives (i.e fewer "tracked" fishers in the Mount Rainier Wilderness).

The untrammelled quality of the Stephen Mather Wilderness would not be affected by this alternative.

Undeveloped

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	3	0	NE	
<u>Undeveloped Total Rating</u>		-3					

Explain:

Satellite collars, fixed wing flights, and placing temporary installations in the wilderness would have a short-term negative impact on the undeveloped quality of wilderness character in the Mount Rainier Wilderness. This alternative would like require slightly less of these developments than Alternatives 1-3 due to the decreased presence of fishers in the Mount Rainier Wilderness immediately following reintroduction (when the collars are functional).

The undeveloped quality of the Stephen Mather Wilderness would not be affected by this alternative.

Natural

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		2	0	0	0	NE	
<u>Natural Total Rating</u>		2					

Explain:

Although restoration of fishers in the Mount Rainier Wilderness would likely be delayed in comparison to the other alternatives, WDFW's actions to reintroduce fishers in the SW Cascades near MORA would have a moderate, long-term, beneficial impact on the naturalness of the Mount Rainier Wilderness because it would improve the processes and biodiversity of this wilderness ecosystem by completing the native predator guild within this wilderness which would have

positive cascading effects on other species present. Fishers would continue to be extirpated from the Stephen Mather Wilderness – maintaining this degraded aspect of the natural quality of this wilderness' character.

Solitude or Primitive & Unconfined Recreation

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		2	0	4	0	NE	
<u>Solitude or Primitive and Unconfined Recreation Total Rating</u>		-2					

Explain:

No releases would occur close enough to the Mount Rainier Wilderness to impact wilderness visitors, and no NPS visitors would have the beneficial opportunity to participate in a release, as opposed to the other alternatives (component 1). However, knowing fishers have been restored to the wilderness, having the slim, though real, chance to see a fisher in the wild and in its native habitat, and having enhanced opportunities to learn about fisher reintroduction would have a long-term beneficial impact on opportunities for primitive and unconfined recreation for both visitors to the Mount Rainier Wilderness and non-visitors alike (components 6 and 7). While the increased likelihood of seeing a fisher in the wild would be a long-term beneficial impact to the wilderness character of the Mount Rainier Wilderness, if a visitor happened to see a fisher collared (which is assumed unlikely in this alternative because of fewer collars used and fewer founding fishers present in the Mount Rainier Wilderness), it would diminish this beneficial impact. Because fishers have large homeranges and tend to be dispersed throughout remote areas, the chances of seeing a fisher, much less one that is collared, in the backcountry, particularly along traveled trails and in campgrounds, would likely be extremely low.

Seeing NPS personnel in the backcountry, finding a remote camera station (through rare, this has happened), and seeing/hearing fixed-wing aircraft associated monitoring would have a short-term negative impact on visitors' opportunities for solitude in the wilderness. This alternative would require less flights and less temporary camera stations than the other alternatives as fisher restoration in the Mount Rainier Wilderness would be delayed under this alternative and less

trackable fishers would be present to monitor.

The Stephen Mather Wilderness and its quality of solitude and primitive and unconfined recreation would not be affected by this alternative.

Other Features of Value

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		1	0	0	0	NE	
<u>Other Features of Value Total Rating</u>		1					

Explain:

The monitoring activities that would accompany reintroduction in the SW Cascades would inform future reintroduction efforts of native species – a long-term benefit to scientific understanding of these processes and educational benefit to visitors. The experimental use of emerging technology, such as satellite collars, would also enhance future restoration and species monitoring efforts.

Other Criteria

What is the effect of each component activity on other comparison criteria? What mitigation measures will be taken?

Maintaining Traditional Skills

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

	satellite collars would be tested						
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Maintaining Traditional Skills Total Rating</u>		0					

Explain:

No action in this alternative helps to maintain proficiency in the use of primitive and traditional skills, non-motorized tools, and non-mechanical travel methods.

Special Provisions

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	0	0	NE	
<u>Special Provisions Total Rating</u>		0					

Explain:

No special provisions are impacted by this alternative.

Economics & Time Constraints

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Effects		5	5	2	2	NE	
<u>Economics & Time Constraints Total Rating</u>		6					

Explain:

****Impacts under economic and time constraints are in comparison to other alternatives.****

Because the NPS would not be taking action, this alternative would come at essentially no cost to the NPS. Therefore, a "positive" impact for economic costs and time constraints is given for all action components for this alternative.

However, there would be no benefit (objectives not met) to the NW Cascades and the Stephen Mather Wilderness, and even though WDFW would restore fishers to the SW Cascades which are expected to eventually immigrate to the Mount Rainier Wilderness, restoration would be delayed; hence the negative rating in comparison to other alternatives.

Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What mitigation measures will be taken?

Safety of Visitors & Workers

<u>Component Activity for this Alternative</u>		Positive		Negative		No Effect	
		MORA	NOCA	MORA	NOCA	MORA	NOCA
1	WDFW would release 80 fishers outside of MORA and the Mount Rainier Wilderness in the SW Cascades. No fishers would be reintroduced to the NW Cascades.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	VHF radio-transmitters would be implanted in fishers; satellite collars would be tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

3	Weekly aerial telemetry would be completed with fixed wing aircraft: 500' agl in areas where fisher are detected (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Personnel and tools would be transported by foot (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Remote camera stations would be installed at areas of suspected denning activity (limited)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Ample information to ensure all objectives are met in MORA; objectives not met for NOCA (see chapter 1 of Plan/EA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	Scientific understanding would be minimally improved. Educational opportunities offered in MORA only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Number of Effects		0	0	2	0	NE	
<u>Safety of Visitors & Workers Total Rating</u>		-2					

Explain:

Fixed wing aircraft flights are a high risk activity and pose a threat to staff safety; however, this alternative would likely require less flights than Alternatives 1-3 due to the use of satellite collars on some fishers and the reduced number of fishers (and therefore needed monitoring) in the Mount Rainier Wilderness immediately following reintroduction. Given the terrain of both wildernesses and the remote locations that fishers are expected to inhabit, traveling by foot to den-sites, etc. is also a risky activity that demands that considerations for human health and safety be made during trip planning. No action would be taken in the Stephen Mather Wilderness.

Summary Ratings for Alternative 4

<u>Wilderness Character</u>	
Untrammeled	-2
Undeveloped	-3
Natural	2
Solitude or Primitive & Unconfined Recreation	-2
Other Features of Value	1
Wilderness Character Summary Rating	-4
<u>Other Criteria</u>	
Maintaining Traditional Skills	0
Special Provisions	0
Economics & Time Constraints	6
Other Criteria Summary Rating	6
<u>Safety</u>	
Safety of Visitors & Workers	-2

Safety Summary Rating	-2
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Alternative Comparison

Alternative 1: **VHF Collars and Aerial Telemetry; Hair-Snares and Remote Camera Stations Installed by Foot**

Alternative 2: **Implanted VHF Transmitters & Aerial Telemetry; Hair-Snares & Remote Camera Stations Installed by Foot**

Alternative 3: **Satellite Collars Tested; Hair-Snares & Remote Camera Stations Installed by Foot**

Alternative 4: **No Action: No NPS Fisher Reintroductions in MORA and NOCA; Limited monitoring in MORA tied to WDFW actions**

Wilderness Character	Alt 1		Alt 2		Alt 3		Alt 4	
	+	-	+	-	+	-	+	-
Untrammeled	0	4	0	4	0	4	0	2
Undeveloped	0	6	0	4	0	6	0	3
Natural	4	0	4	0	4	0	2	0
Solitude or Primitive & Unconfined Rec.	6	8	6	6	6	8	2	4
Other Features of Value	2	0	2	0	2	0	1	0
<i>Total Number of Effects</i>	12	18	12	14	12	18	5	9
Wilderness Character Rating	-6		-2		-6		-4	

Other Criteria	Alt 1		Alt 2		Alt 3		Alt 4	
	+	-	+	-	+	-	+	-
Maintaining Traditional Skills	0	0	0	0	0	0	0	0
Special Provisions	0	0	0	0	0	0	0	0
Economics & Time Constraints	2	12	4	10	6	8	10	4
<i>Total Number of Effects</i>	2	12	4	10	6	8	10	4
Other Criteria Rating	-10		-6		-2		6	

Safety	Alt 1		Alt 2		Alt 3		Alt 4	
	+	-	+	-	+	-	+	-
Safety of Visitors & Workers	0	4	0	4	0	4	0	2
Safety Rating	-4		-4		-4		-2	

Alternatives Not Analyzed

What alternatives were considered by not analyzed? Why were they not analyzed?

No or Limited Monitoring (limit frequency of aerial telemetry flights/limited number of camera stations, etc.): Monitoring is needed for NPS managers to ensure that fisher reintroductions in the SW and NW Cascades are implemented in the most effective manner that will ensure the greatest likelihood for success, and in fact, *NPS Management Policies 2006* call for each park to integrate the “best available science” and “best available technology” “to restore the biological and physical components of [ecosystems], accelerating both their recovery and the recovery of landscape and biological community structure and function”. Therefore, placing additional, somewhat arbitrary, limitations (beyond those that already exist due to technology (device failure, restricted data, etc.) and natural processes (weather, etc.)) on the ability of resource managers to be able to gather scientific information that could lead to more effective releases in later years of the reintroduction effort and protect the species into the future is not considered a viable alternative.

No tracking devices on any fishers reintroduced in the SW and NW Cascades: This is not a viable alternative because WDFW is leading the fisher reintroduction process outside of NPS boundaries, and the NPS has no authority to change WDFW procedures, particularly as they are in line with best scientific practices.

Track fishers using satellite collars only: Although satellite technology does not require aerial overflights for most monitoring, current designs are too large and heavy for their use on female fishers and therefore cannot be used on all fishers in the reintroduction effort. However, as technology is advancing rapidly, Alternative 3 allows for the use of satellite collars on adult male fishers on a trial basis in the first year of the first reintroduction. If found to be effective, and technology advances to meet project needs (e.g. reduction in size and weight), project managers would closely evaluate their use and could increase the use of satellite collars during project implementation. Currently, VHF radio transmitters are the only devices available that meet the full monitoring needs and objectives of this proposed project. If, during the course of this project, technology advances where satellite transmitters would be suitable and they are shown to be effective for the purposes of this project, Alternative 3 would allow this emerging technology to be used in future years of project implementation (see *Adaptive Management* in the Plan/EA).

Complete telemetry solely by foot: Radio telemetry signals are by far too weak to be able to effectively complete telemetry by foot throughout the Mount Rainier and Stephen Mather Wildernesses. As incorporated in every alternative: “Where access allows, telemetry would be completed by foot and mortalities and suspected den sites would be investigated on foot to collect the carcass or verify denning and reproduction”.

Telemetry will only occur before memorial day and after labor day to avoid high periods of visitor use: Although telemetry would focus most heavily on the denning period (spring, prior to memorial day), consistent measurements are necessary throughout the year in order to monitor dispersal, the establishment of homeranges, and mortalities. This information provides resource managers with the tools to adaptively manage future releases and determine whether or not the species is successfully recovering within the Mount Rainier and Stephen Mather Wildernesses.

Place hair snares and remote camera stations via helicopter or stock: Because these stations can be set up by foot, there was no need to evaluate the use of a prohibited use or more intensive use in wilderness.

Decision

Refer to the MRDG Instructions before identifying the selected alternative and explaining the rationale for the selection.

Selected Alternative

- | | | |
|-------------------------------------|-----------------------|--|
| <input type="checkbox"/> | <u>Alternative 1:</u> | VHF Collars and Aerial Telemetry; Hair-Snares and Remote Camera Stations Installed by Foot |
| <input type="checkbox"/> | <u>Alternative 2:</u> | Implanted VHF Transmitters & Aerial Telemetry; Hair-Snares & Remote Camera Stations Installed by Foot |
| <input checked="" type="checkbox"/> | <u>Alternative 3:</u> | Satellite Collars Tested; Hair-Snares & Remote Camera Stations Installed by Foot |
| <input type="checkbox"/> | <u>Alternative 4:</u> | No Action: No NPS Fisher Reintroductions in MORA and NOCA; Limited monitoring in MORA tied to WDFW actions |

Explain Rationale for Selection:

NB: this decision affirming what the minimum tools are does not constitute approval of the overall restoration project.

When comparing the four alternatives, the project team noted that almost all beneficial impacts to wilderness character identified in this MRDG would have at least moderate benefits to wilderness character that would last in perpetuity; whereas all adverse impacts to wilderness character would be mostly negligible, transient, short-term (not lasting more than three years), and in some cases, very unlikely to occur. Therefore, the numerical ratings in the "Alternatives Comparison" table are not sufficient on their own to evaluate and compare these alternatives.

For example, Alternative 4, while having the "best" overall score (0), does not adequately address the situation as described under Step 1 as fisher would not be restored to the Stephen Mather Wilderness. Therefore, although this alternative serves as a good comparison for the other alternatives, it is dismissed from further consideration. Alternative 1 is also dismissed as it clearly has the worst overall score (-20) and uses an older technology (VHF collars on all 160 fishers) that has wilderness impacts (introduces a man-made device in wilderness and would be visible to visitors if they saw such a device on a fisher) above those from Alternatives 2 and 3, without the benefit of additional information, as gathered by a satellite collar, in Alternative 3.

While Alternatives 2 and 3 have the same overall score (-12), it appears from the numerical ratings that Alternative 3 has less wilderness impacts than Alternative 2. However, this is not a fair assessment. The four-point difference between the two alternatives in the scoring under wilderness character is because, all other impacts scored similarly (i.e. presence of impact), Alternative 3 would use satellite collars in a pilot program that would impact the undeveloped quality of wilderness character from its mere presence and the solitude quality of wilderness character from the extremely low likelihood of a visitor seeing a collar on a fisher. Neither of these impacts are considered more than negligible due to predicted low use of satellite collars (five of the 40 fishers would have satellite collars in year one under this alternative) and the already rare opportunity for visitors to see a fisher in the wild, much less one with a satellite collar. What the scores do not show is that Alternative 3 would require less aerial telemetry than Alternative 2 (a smaller impact to undeveloped for this component), would result in additional benefits to scientific understanding (additional benefit to other features of value), and could ensure a more successful reintroduction (additional benefits to natural). Furthermore, the use of satellite collars in a pilot

scientific understanding (additional benefit to other features of value), and could ensure a more successful reintroduction (additional benefits to natural). Furthermore, the use of satellite collars in a pilot program under Alternative 3 would adhere to NPS policies in using the best available technology for restoring a species to its native habitat. Obviously, the planning staff for this project has some concerns about satellite collars and acknowledges that the technology is not ready for full scale implementation; hence the dismissal of use of satellite collars on all reintroduced fishers to the SW and NW Cascades (see "Alternatives not Analyzed"). However, if these collars are proven to be effective (in that they have little impact to fisher, they are light enough for females to carry, they provide good data collection, there are few instances of collars falling off animals, and the collar has an extended life, etc.), these collars could reduce impacts to wilderness character and enhance the outcomes of fisher restoration in the SW and NW Cascades.

Therefore, Alternative 3, which includes a pilot program for the use of satellite collars, is determined to be the minimum tool to implement fisher restoration in the Mount Rainier and Stephen Mather Wildernesses.

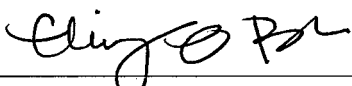
Describe Monitoring & Reporting Requirements:


All aerial telemetry flights over MORA or NOCA must be reported to the aviation coordinator at each respective park at the end of the year. Report should include flight hours and type of aircraft. Wildlife biologists at each park should also track the number of temporary camera stations installed in the wilderness as a result of monitoring fishers and the duration of operation of each station (a separate MRA will be completed prior to installing these temporary stations). This number should be reported to the wilderness district ranger on an annual basis.

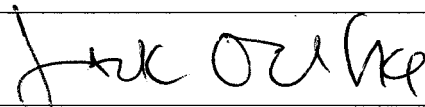
Approval of Prohibited Uses

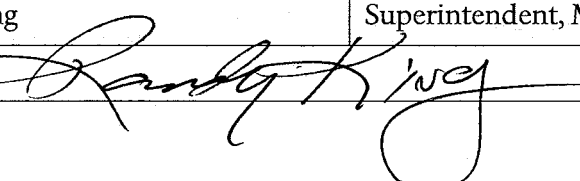
Which of the prohibited uses found in Section 4(c) of the Wilderness Act are approved in the selected alternative and for what quantity?

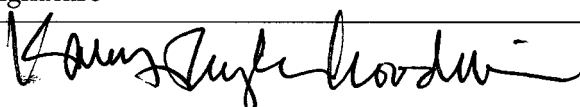
- | | |
|---|---|
| <input checked="" type="checkbox"/> Mechanical Transport: | Use of Aerial Telemetry (years 1-3 in each wilderness): weekly flights over suitable fisher habitat with a small fixed wing aircraft. Maximum of five flights per month. Flights may go as low as 333 feet above canopy or 500 feet above ground limit (agl) (whichever is higher). Flights limited to Monday-Thursday whenever possible. |
| <input type="checkbox"/> Motorized Equipment: | |
| <input type="checkbox"/> Motor Vehicles: | |
| <input type="checkbox"/> Motorboats: | |
| <input type="checkbox"/> Landing of Aircraft: | |
| <input type="checkbox"/> Temporary Roads: | |
| <input type="checkbox"/> Structures: | |
| <input checked="" type="checkbox"/> Installations: | Temporary camera stations (yrs 1-3 in each wilderness): set up by foot, only in located where denning activity is suspected. Placed in areas with little visitor use and would be out-of-site for visitors. |

Prepared	Name	Position	
	Elizabeth Boerke	Environmental Protection Specialist, North Cascades National Park Service Complex	
	Signature		Date
			4.22.15

Recommended for Mount Rainier Wilderness	Name	Position	
	Kraig Snure	Wilderness District Ranger, Mount Rainier National Park	
	Signature		Date
			4-30-2015

Recommended for Stephen Mather Wilderness	Name	Position	
	Jack Oelfke	Acting Wilderness Coordinator, North Cascades National Park Service Complex	
	Signature		Date
			4/22/15

Approved for Mount Rainier Wilderness	Name	Position	
	Randy King	Superintendent, Mount Rainier National Park	
	Signature		Date
			4/30/15

Approved for Stephen Mather Wilderness	Name	Position	
	Karen F. Taylor-Goodrich	Superintendent, North Cascades National Park Service Complex	
	Signature		Date
			4/27/2015