



U.S. Department of the Interior
U.S. Fish and Wildlife Service
National Park Service



Draft Grizzly Bear Restoration Plan / Environmental Impact Statement

NORTH CASCADES ECOSYSTEM



January 2017

**UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE AND U.S. FISH AND WILDLIFE SERVICE
NORTH CASCADES ECOSYSTEM
DRAFT GRIZZLY BEAR RESTORATION PLAN / ENVIRONMENTAL IMPACT
STATEMENT**

Lead Agencies: National Park Service (NPS) and U.S. Fish and Wildlife Service (FWS), U.S. Department of the Interior

This draft *North Cascades Ecosystem Grizzly Bear Restoration Plan / Environmental Impact Statement* (draft plan/EIS) evaluates the impacts of a range of alternative approaches for determining how to restore the grizzly bear to the North Cascades Ecosystem grizzly bear recovery zone, a portion of its historical range. Upon conclusion of the draft plan/EIS and decision-making process, the alternative selected for implementation will become the North Cascades Ecosystem Grizzly Bear Restoration Plan.

This draft plan/EIS evaluates the impacts of the no-action alternative (alternative A) and three action alternatives (alternatives B, C, and D). All action alternatives would seek to achieve a grizzly bear restoration goal of 200 bears. The no-action alternative (alternative A) would be a continuation of existing management practices and assumes no new management actions would be implemented. “Alternative B: Ecosystem Evaluation Restoration” would seek to release up to 10 grizzly bears within the first 2 years of implementation, then monitor those bears for habitat use and human conflict through year 4. During year 4, managers would decide whether to repeat the initial releases of up to 10 bears over 2 years or switch to implementing alternative C. “Alternative C: Incremental Restoration” would seek to reestablish grizzly bear reproduction in the ecosystem by releasing up to 25 bears over 5 to 10 years. “Alternative D: Expedited Restoration” would seek to expedite grizzly bear restoration by releasing a sufficient number of bears that result in a population of 200 bears on the landscape, including bears added through reproduction, over approximately 25 years. In addition to the primary actions of each alternative, a number of elements would be common to the action alternatives. These elements include the restoration goal of 200 bears; guidelines for human-grizzly bear conflicts; capture, release and monitoring techniques; public education and involvement; access management; and habitat management. The option to designate the grizzly bear population as experimental under section 10 of the *Endangered Species Act* pursuant to a special rulemaking process is also considered. This environmental impact statement provides the *National Environmental Policy Act* impact analysis to support the development of such a rule.

The draft plan/EIS analyzes the potential environmental impacts on wildlife and fish (including grizzly bears), wilderness, visitor use and recreational experience, public and employee safety, socioeconomics, and ethnographic resources.

The review period for this document will end 60 days after publication of the U.S. Environmental Protection Agency Notice of Availability in the *Federal Register*. During the comment period, comments will be accepted electronically through the NPS Planning, Environment, and Public comment website and in hard copy delivered by the U.S. Postal Service or other mail delivery service or by hand to the following address: Superintendent, North Cascades National Park Service Complex, 810 State Route 20, Sedro-Woolley, WA 98284. Written comments will also be accepted during public meetings. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will not be accepted. For further information, visit www.parkplanning.nps.gov/grizzlydeis.

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EXECUTIVE SUMMARY

The National Park Service (NPS) and U.S. Fish and Wildlife Service (FWS) have prepared this draft *North Cascades Ecosystem Grizzly Bear Restoration Plan / Environmental Impact Statement* (draft plan/EIS) in accordance with the *National Environmental Policy Act* of 1969 (NEPA), as amended, to determine how to restore the grizzly bear to the North Cascades Ecosystem (NCE), a portion of its historical range. This draft plan/EIS includes an assessment of the potential impacts of various alternatives for grizzly bear restoration in the NCE to the environment, including cultural and socioeconomic resources. Each of the chapters of this draft plan/EIS is summarized in the following pages.

PURPOSE AND NEED

Chapter 1 of the plan/EIS, “Purpose of and Need for Action,” describes why NPS and FWS are taking action at this time with respect to the restoration of grizzly bears to the NCE.

Background

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

The greater NCE constitutes a large block of contiguous habitat that spans the international border between the United States and Canada, but is isolated from grizzly bear populations in other parts of the two countries. The U.S. portion of the ecosystem spans the crest of the Cascade Range from the temperate rainforests of the west side to the dry ponderosa pine forests and sage-steppe on the east side, and comprises one of the most intact wildlands in the contiguous United States. Historical records indicate that grizzly bears once occurred throughout the NCE. A grizzly bear habitat evaluation was conducted from 1986 to 1991 in response to recommendations made in the 1982 FWS nationwide *Grizzly Bear Recovery Plan*. This habitat evaluation, along with a subsequent report by the Interagency Grizzly Bear Committee (IGBC) technical committee review team, concludes that the U.S. portion of the NCE contains sufficient habitat quality to maintain and recover a grizzly bear population (Servheen et al. 1991; Almack et al. 1993). More recent carrying capacity modeling suggests the most plausible carrying capacity for the U.S. portion of the NCE is approximately 280 bears (Lyons et al. 2016).

The overall population status of the grizzly bear in the greater NCE is unknown; however, it is highly unlikely that the NCE contains a viable grizzly bear population. There have been only four confirmed detections of grizzly bears in the greater NCE in the past 10 years, all of which occurred in British Columbia and may comprise only two individuals (IGBC NCE Subcommittee 2016). Because of the small documented number of grizzly bears, very slow reproductive rate, and other recovery constraints, the grizzly bear in the NCE was found by the FWS to be warranted for uplisting to endangered status, but was precluded by higher-priority listings (FWS 2016a). Because there has been no confirmed evidence of

grizzly bears within the NCE in the United States since 1996 (IGBC NCE Subcommittee 2016), any remaining bears in the NCE do not meet the accepted definition for a population (i.e., evidence of 2 adult females with cubs or 1 adult female tracked through two litters) (FWS 2000a).

Purpose and Need

The purpose of this draft plan/EIS is to determine how to restore the grizzly bear to the NCE, a portion of its historical range.

Grizzly bears in the NCE are at risk of local extinction. As a result, the proposed action is necessary to accomplish the following:

- Avoid the permanent loss of grizzly bears in the NCE.
- Contribute to the restoration of biodiversity of the ecosystem for the benefit and enjoyment of present and future generations of people.
- Enhance the probability of long-term survival of grizzly bears in the NCE and thereby contribute to overall grizzly bear recovery.
- Support the recovery of the grizzly bear to the point where it can be removed from the federal list of threatened and endangered wildlife species.

Objectives in Taking Action

Objectives are more specific statements of purpose that provide additional bases for comparing the effectiveness of alternatives in achieving the desired outcomes of an action (NPS 2015a). The objectives of this draft plan/EIS are to:

- Restore a grizzly bear population as part of the natural and cultural heritage of the North Cascades.
- Provide Pacific Northwest residents and visitors with the opportunity to again experience grizzly bears in their native habitat.
- Seek to support tribal cultural and spiritual values, as well as environmental and natural resource objectives related to the grizzly bear.
- Expand outreach efforts to inform and involve the public, and build understanding about grizzly bear recovery.

Issues and Impact Topics

The NPS and FWS identified a range of issues and impact topics to evaluate in this draft plan/EIS to determine the potential impacts on the human environment that could result from implementation of the alternatives. Issues were analyzed in depth for the following impact topics:

- Grizzly bears
- Other wildlife and fish
- Wilderness character
- Visitor use and recreational experience

- Public and employee safety
- Socioeconomics
- Ethnographic resources

ALTERNATIVES CONSIDERED

Chapter 2 of the draft plan/EIS, “Alternatives,” describes the various short- and long-term actions that the NPS and FWS could implement for grizzly bear restoration in the NCE. The alternatives under consideration in this plan/EIS include a required “no-action” alternative plus three action alternatives that were developed by an interdisciplinary planning team and feedback from the public, other agencies, and the scientific community during the planning process. Upon conclusion of the draft plan/EIS and decision-making process, one of the alternatives, or a combination of actions from multiple alternatives, will become the grizzly bear restoration plan. The plan will guide future NPS and FWS actions related to grizzly bear restoration in the NCE for the foreseeable future, until conditions necessitate that the plan be revised.

Alternative A (No Action)

Under alternative A (no action), existing management practices would be followed, and no new management actions would be implemented beyond those available at the outset of the grizzly bear restoration planning process. Management actions would be focused on improved sanitation, poaching control, motorized access management, outreach, and educational programs to provide information about grizzly bears and grizzly bear recovery to the public, and research and monitoring to determine grizzly bear presence, distribution, habitat, and home ranges. Based on the Revised Code of Washington 77.12.035, described in chapter 1, alternative A is the only alternative being evaluated in detail that would allow for the full participation by the state of Washington.

Elements Common to All Action Alternatives

All of the action alternatives would seek to restore a self-sustaining population of at least 200 bears through the capture and release of grizzly bears into the NCE. Each of the action alternatives would involve a similar approach to the capture, transport, and release of grizzly bears; enhanced public education and outreach; guidelines for management actions to respond to human-grizzly bear conflicts; and a similar approach for the replacement or additional releases of grizzly bears, access management, and habitat management.

Alternative B—Ecosystem Evaluation Restoration

Under alternative B, “Ecosystem Evaluation Restoration,” the NPS and FWS would implement an ecosystem evaluation approach to grizzly bear restoration, wherein a total of up to 10 grizzly bears would be captured from source populations in northwestern Montana and/or south-central British Columbia and released at a single remote site on NPS or U.S. Forest Service (USFS) lands in the NCE over two consecutive summers. Grizzly bears that would be considered appropriate candidates for capture and release would be typically independent subadults between 2 and 5 years of age that had not yet reproduced and had exhibited no history of human conflict. The target sex ratio for initial releases would be approximately 60% to 80% female and 20% to 40% male. No additional releases of grizzly bears would occur for 2 years following the initial releases, except for the replacement of grizzly bears lost due to mortality, emigration, or removal due to human conflict. Instead, the grizzly bears released during the first 2 years (years 1 and 2) would be monitored for an additional 2 years (years 3 and 4) for habitat use

and instances of human conflict. In the fourth year, a decision would be made regarding how management would proceed during subsequent releases. Depending on the results of the monitoring information, the NPS and FWS may choose to repeat the initial release, where an additional 10 bears would be released at a single site over 2 years followed by 2 additional years of monitoring. Alternatively, the NPS and FWS could decide to transition to “Alternative C—Incremental Restoration.” Alternative B is expected to achieve the restoration goal of approximately 200 grizzly bears within 60 to 100 years.

Alternative C—Incremental Restoration

Under alternative C, “Incremental Restoration,” the NPS and FWS would release approximately 5 to 7 grizzly bears into the NCE each year over roughly 5 to 10 years, with a goal of establishing an initial population of 25 grizzly bears. Grizzly bears would be released at multiple remote sites on NPS and USFS lands, which would be located in close proximity to one another to facilitate interaction and breeding among released grizzly bears. Grizzly bears released into the U.S. portion of the NCE under alternative C would be selected based on the same criteria for sex/age class, reproductive status, and no history of human conflict described under alternative B. After the initial population goal of 25 grizzly bears has been reached, additional bears would likely be released into the ecosystem over time to address mortality, population and demographic trends, genetic limitations, distribution, or to adjust the population’s sex ratio to improve reproductive success. Grizzly bears could be removed or relocated based on conflicts with humans. Subsequent release sites would continue to be evaluated and selected based on longer-term monitoring of grizzly bear habitat use and movements. Release sites may be removed from use based on factors such as mortality, out-migration, or human-bear conflict. Alternative C is expected to result in the achievement of the restoration goal of approximately 200 grizzly bears within 60 to 100 years.

Alternative D—Expedited Restoration

Under alternative D, “Expedited Restoration,” the NPS and FWS would seek to expedite grizzly bear restoration by releasing additional grizzly bears into the NCE over time until the restoration goal is reached. This alternative would not limit the population goal for the initial restoration phase to 25 animals and would not set a limit for the number of grizzly bears released into the NCE. Rather, the number of suitable grizzly bears captured in a given year would be released. It is anticipated that the logistics and capacity of management agencies to carry out capture and release would constrain the ability to release a large number of grizzly bears in any single year under this alternative (the actual number of grizzly bears to be released per year would likely be 5 to 7). Capture and release efforts would continue each year as necessary until a combination of release efforts and reproduction results in a population of approximately 200 grizzly bears on the landscape. Criteria for age and sex ratios for grizzly bears captured and released under alternative D would be less restrictive than under alternatives B and C. Grizzly bears up to 10 years old would be targeted for capture and release, and the sex ratio could be as many as 1 male for every 2 females. Similar to alternative C, grizzly bears would be released at multiple remote sites on NPS and USFS land based on habitat criteria. Once the restoration goal under alternative D is achieved, subsequent releases would be unlikely. However, grizzly bears would be monitored for genetic diversity and if necessary additional grizzly bears may be added over time. Alternative D is expected to result in the achievement of the restoration goal of approximately 200 grizzly bears within roughly 25 years.

Endangered Species Act Section 10(j) Designation Rulemaking Option

Grizzly bears released into the NCE would be managed as threatened species under the ESA under all action alternatives. However, an option would be available under any of the action alternatives to designate grizzly bears in the U.S. portion of the NCE as a 10(j) experimental population under section 10 of the ESA. An experimental population is a group of reintroduced plants or animals that is geographically isolated from other populations of the species that is typically determined to be “essential” or “nonessential” to the survival of the species as a whole but contributes to their recovery. Section 10(j) provides for the reintroduction of experimental populations under special regulations and may include protective regulations established under authority of section 4(d) of the ESA.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3 of the draft plan/EIS describes the affected environment in the NCE as it pertains to the consequences of the alternatives for each impact topic considered. Chapter 4 analyzes the potential environmental consequences of the actions associated with the alternatives on these impact topics. The following provides a summary of the affected environment and the environmental consequences of the alternatives.

Grizzly Bears

Grizzly bears in the NCE are isolated from other grizzly bear populations. The nearest populations to the east are in the Kettle-Granby Grizzly Bear Population Unit (GBPU) in British Columbia and the Selkirk Mountains in Washington, Idaho, and British Columbia. Grizzly bears inhabit the remote areas east of the Okanogan River and west of the Kettle-Granby Mountains, but the very limited number of detections indicate that the populations are probably limited to a very small number of animals. The nearest population to the north is composed of a small number of individuals in the Stein-Nahatlatch GBPU in British Columbia (Proctor et al. 2012). Farther to the west, grizzly bears in the Squamish-Lillooet and Garibaldi-Pitt GBPUs are likewise not at a population density that would facilitate range expansion into the NCE through dispersal across the major barriers created by the Fraser River, the TransCanada Highway, two national railroads, and the high levels of human influence along that corridor (Braaten et al. 2013). Few confirmed sightings of grizzly bears have been made in recent decades in the NCE on either side of the international border. The most recent confirmed observation within the U.S. portion of the NCE was in 1996, south of Glacier Peak. The only direct evidence of reproduction during the past 25 years was a confirmed observation of a female and cub on upper Lake Chelan in 1991. Because of the small size and isolation of the NCE grizzly bear population, it is believed to be at significant risk of eventual extirpation. Biological consensus is that grizzly bears in the NCE would have difficulty recovering on their own and need some form of human intervention to achieve reproduction and eventual recovery.

Under alternative A (no-action alternative), it is unlikely that the restoration goal of 200 grizzly bears in the NCE would be achieved because grizzly bears in the NCE would have difficulty recovering on their own and would require some form of human intervention to achieve reproduction and eventual recovery.

Under alternative B (ecosystem evaluation restoration), grizzly bears released into the NCE would benefit in the long term from a large block of suitable habitat that would help further the conservation of the species. Alternative B could promote the highest survival rate of translocated bears of all the action alternatives through its monitoring and adaptive management plan, but the slower rate of releases would likely increase the amount of time to achieve the restoration goal in the NCE. The release of grizzly bears into the NCE would require their capture and transport from other areas, and some level of mortality is

expected. However, every effort would be taken to minimize capture and transport-related mortalities. The North Cascades Grizzly Bear Recovery Team (British Columbia 2004) estimates that approximately 2% of the grizzly bear population in the NCE would be lost to human-caused mortality each year, including mortalities associated with restoration activities. Although the removal of grizzly bears from source populations in Montana and British Columbia would effectively count as mortality, the sustainability of these source populations would not be affected. Overall, alternative B would result in beneficial impacts on grizzly bears by initiating their restoration to areas of suitable habitat and furthering conservation of the species. Cumulative impacts on grizzly bears under alternative B would be beneficial, and the contribution of alternative B to overall beneficial cumulative impacts would be small, limited by the small number of bears released.

Alternative C (incremental restoration) would release up to 5 to 7 grizzly bears per year until an initial population of 25 grizzly bears in the U.S. portion of the NCE is reached, although additional bears could be released every few years to help meet restoration objectives. Once an initial population of 25 grizzly bears is reached, the restoration goal of 200 bears in the NCE would likely be achieved in approximately 60 to 100 years. Similar to alternative B, the handling of grizzly bears translocated to the NCE during capture, release, and monitoring would result in a minimal risk of human-caused mortality and the sustainability of source populations in Montana and British Columbia would be minimally affected. Overall, alternative C would result in beneficial impacts on grizzly bears by restoring them to areas of suitable habitat and furthering conservation of the species. Cumulative impacts on grizzly bears under alternative C would be beneficial, and the contribution of alternative C to overall beneficial cumulative impacts would be substantial.

Alternative D (expedited restoration) would involve the release of grizzly bears into the NCE until the restoration goal is achieved, which would require the translocation of 155 to 168 grizzly bears. In addition, the greater level of trapping effort required by alternative D would increase the risk of adverse impacts on grizzly bears from capture-related mortality. It would take approximately 25 years to reach 200 bears in the NCE using the expedited restoration strategy and assuming a certain amount of reproduction. Alternative D is not likely to have any substantial adverse impacts on the resident population of grizzly bears in source areas because the managing agencies in these areas would determine the appropriate number of grizzly bears available for translocation. Similar to alternative C, alternative D would result in beneficial impacts on grizzly bears by restoring them to areas of suitable habitat and furthering conservation of the species. Cumulative impacts on grizzly bears under alternative D would be beneficial, and the contribution of alternative D to overall beneficial cumulative impacts would be substantial.

Other Wildlife and Fish

The NCE is home to a high diversity of other wildlife, birds, and fish that have adapted to a range of diverse habitats. Grizzly bear restoration actions could affect species as a result of the use of aircraft or other vehicles during the release and monitoring of grizzly bears. Wildlife and fish species such as elk and deer, black bear, and trout could be affected in terms of grizzly bear predation or competition for resources.

Under alternative A, the no-action alternative, no grizzly bears would be released into the NCE; therefore, there would be no predator-prey interactions or competition for resources between grizzly bears and other wildlife species.

Under alternative B, the initial release of grizzly bears into the NCE could result in disturbance to denning mammals or nesting birds as a result of helicopter operations in close proximity to active dens or nests; however, this disturbance is expected to be limited to approximately four flights per bear and would be

limited to five to seven days per year in mid- to late summer and fall. There would be an increased incidence of grizzly predation on ungulates, which would be low given the initial number of bears released. Potential adverse impacts on black bear population dynamics from interspecific competition is expected to be limited to interactions between individual bears and would not be expected to affect black bears on a population level. Initial restoration activities under alternative B would not involve any disturbance of fish habitat. Fish are not expected to be a primary food source for grizzly bears, and the number of grizzly bears in the ecosystem would not be sufficient to generate any adverse impacts on fish populations as a result of predation. Overall, ongoing and reasonably foreseeable future activities would have both beneficial and adverse effects on other wildlife species, but in aggregate, these impacts would be beneficial. Alternative B would contribute adverse impacts primarily related to helicopter use during initial restoration, but overall would contribute to beneficial cumulative impacts.

Alternative C would result in impacts on predator-prey interaction similar to those described under alternative B. These would be more pronounced under alternative C during the early part of the grizzly bear restoration process. Under alternative C, approximately 2.5 times more helicopter flights would occur than under alternative B, but the anticipated impacts on other wildlife species from noise associated with helicopter use would be similar. Ongoing and reasonably foreseeable future activities would have both beneficial and adverse on other wildlife species under alternative C, but in aggregate, these impacts would be beneficial. Alternative C would contribute some adverse impacts on other wildlife species primarily related to helicopter use, but overall would contribute to beneficial cumulative effects on other wildlife.

Under alternative D, the release of grizzly bears into the NCE would take place until the restoration goal is achieved. As a result, it would occur over a much shorter period of time than under alternative C (approximately 25 years). However, the number of helicopter operations in a given season is expected to be roughly the same under all alternatives; therefore, the potential for adverse impacts on other wildlife in a given year is expected to be similar to alternative C. Alternative D would result in adverse impacts related to the potential for grizzly bear predation on, and/or competition with, some wildlife and fish species, and these would be detectable much more quickly than under alternative C because of the shorter time frame to reach the restoration goal. Given the habitat use, life histories, and other characteristics of many of these species, in combination with grizzly bear life history, habitat use, feeding behavior, and the expected number of grizzly bears that would be present in the NCE in the long term, adverse impacts on other wildlife species are nonetheless expected to be minimal. Overall, ongoing and reasonably foreseeable future activities would have both beneficial and adverse impacts on other wildlife species, but in aggregate, these impacts would be beneficial. Alternative D would contribute adverse impacts primarily related to helicopter use but would have no lasting adverse impacts. The reestablishment of grizzly bears as part of the ecosystem would result in improved ecosystem health over the long term. Overall, cumulative impacts on other wildlife and fish under alternative D would be beneficial, and alternative D would contribute a beneficial increment to these overall beneficial cumulative impacts.

Wilderness Character

The North Cascades National Park Service Complex (park complex), adjacent national forest wilderness areas, and other national forest wilderness not contiguous with the park complex comprise more than 2.6 million acres of federally designated wilderness within the NCE. Federally designated wilderness is typically characterized in terms of five different wilderness character qualities: untrammeled, natural, undeveloped, providing opportunities for solitude or primitive and unconfined recreation, and other features of value. All of these wilderness qualities are reasonably intact within the NCE. Grizzly bear restoration activities could affect wilderness character and values in both adverse and beneficial ways.

Under alternative A, the no-action alternative, grizzly bears would not be released into the NCE, resulting in no new impacts on the undeveloped quality of wilderness character.

The implementation of alternative B would result in adverse and beneficial impacts on wilderness character. This alternative would release up to 10 grizzly bears over the first 2 years of initial restoration activities. The duration of impacts on the qualities of wilderness character would likely be short, only occurring during releases, limited by the number of helicopter trips over the first, 2 years (approximately 40 trips). There would also be intermittent and localized adverse impacts from monitoring grizzly bears or additional translocations of grizzly bears to address issues with mortality, population trends, genetic limitations, distribution, or the sex ratio. However, the restoration of grizzly bears would benefit the natural value of wilderness because the species is largely absent from the NCE with only a few sightings in the last 10 years. When combined with other past, present, and reasonably foreseeable future actions, the cumulative actions of alternative B would result in adverse impacts on wilderness character as a result of the methods used for restoration, and the adverse contribution of alternative B to these cumulative actions would be minimal. However, the limited adverse impacts from alternative B would be offset by restoring a native species, a beneficial impact.

Alternative C would result in impacts on wilderness character in the NCE similar to those described for alternative B, but these impacts could be experienced over a longer time frame because alternative C would involve the release of 25 bears over approximately 5–10 years, with up to 100 to 136 helicopter flights to release 25 to 34 bears (up to 9 bears released to address mortality or emigration). Over time, the restoration of the grizzly bear would result in benefits to the natural quality of wilderness because it would restore a native species to the ecosystem. Cumulative actions would result in adverse impacts on wilderness character, but the adverse contribution of alternative C to these cumulative actions would be minimal. Alternative C would also provide lasting benefits to wilderness by restoring a native species.

The implementation of alternative D would result in adverse impacts associated with the active capture and release of grizzly bears into the NCE similar to those described under alternative C; however, adverse impacts would continue for up to 15 additional years (including 672 helicopter flights), substantially extending the impacts on wilderness character over time. Release of grizzly bears would result in lasting beneficial impacts on wilderness character by restoring a native species that has not had a viable population in the NCE in many years. Overall, cumulative actions would result in adverse impacts on wilderness character, and the adverse contribution of alternative D to these overall adverse cumulative impacts would be minimal.

Visitor Use and Recreational Experience

The park complex and the national forests within the NCE provide a diverse array of recreational opportunities, including hiking, backpacking, camping, climbing, fishing, horseback riding, bicycling, boating, winter sports, and wildlife viewing. Opportunities for hunting are available in the NPS national recreation areas and on the national forests, and off-road vehicle use is permitted on the national forests. The park complex offers a variety of educational and interpretive programs, visitor facilities, and lodging facilities. The restoration of grizzly bears to the NCE could increase visitation and recreational use of the park and national forests as visitors seek to experience grizzly bears in their native habitat. Restoration actions that result in an increased grizzly bear population could also affect recreational opportunities for visitors who do not wish to encounter grizzly bears.

Under alternative A, the no-action alternative, grizzly bear restoration activities would not occur in the NCE and as a result, no impacts on visitor use and recreational experience are expected.

Overall, the impacts of alternative B on visitor use and recreational experience would be varied but limited given the small number of bears released into the ecosystem and the limited number of helicopter trips over 2 years (approximately 40 trips). The potential for conflicts to occur is expected to remain low because the number and density of grizzly bears on the landscape would remain very small, (approximately 10 bears), limiting the probability that visitors would encounter them. Additionally, the location of the release site in high quality grizzly habitat away from main visitor areas would mitigate the potential for human-grizzly interactions. Adverse impacts associated with intermittent, brief disruptions to visitor use that may be associated with certain activities (e.g., 40 helicopter flights) would be offset by the benefits of grizzly bears being restored to a native ecosystem. Because road and trail access would not be restricted, no change from the existing condition is expected. Cumulative impacts resulting from other management actions (repair and maintenance of trails and infrastructure, removal of invasive species, and habitat restoration projects) would be an improvement to existing conditions and would combine with alternative B to provide overall benefits.

Under alternative C, the primary phase of grizzly bear restoration would be spaced out over 5 to 10 years, with up to 100 to 136 helicopter flights into remote areas to release 25 to 34 bears (up to 9 bears released to address mortality or emigration), although some additional flights may also be necessary for collar retrieval, subsequent releases, and incidental actions. These flights could temporarily disrupt visitor use and recreational experiences if visitors are in the flight path or in areas of releases to a greater extent under alternative C than under alternative B. These impacts would be very short, lasting only minutes per occurrence. Other adverse impacts could occur if restoration activities require temporary closures; however, based on experience in other ecosystems, closures are only expected to last a few hours up to a couple of days. The potential for conflicts to occur is expected to remain low because the number and density of grizzly bears on the landscape would remain small, limiting the probability that visitors would encounter them and because full restoration would take between 60 and 100 years. Visitor perceptions and impacts would be the similar to those described under alternative B. Alternative C would provide lasting benefits regarding visitors' experience of nature through the reestablishment of a native species that has not had a viable population in the NCE for many years. When combined with other past, present, and reasonably foreseeable future actions, cumulative impacts from alternative C are expected to be primarily beneficial, with alternative C contributing some adverse, but otherwise beneficial impacts.

Alternative D has the potential for more impacts on visitor use and recreational experience compared to the other alternatives because it would involve the release of more grizzly bears, and active capture and release operations would take place over a longer time frame. Alternative D would have more pronounced effects (during the primary phase) on visitor use and recreational experience related to management activities, noise, and the visible presence of helicopters (672 flights) and aircraft as well as the potential for human-grizzly encounters when compared to the other alternatives. Alternative D involves the additional releases of bears; therefore, the potential for human-grizzly bear interaction is somewhat greater within a shorter time frame compared to alternatives B and C. However, alternative D would provide lasting benefits regarding visitors' experience of nature through the reestablishment of a native species that has not had a viable population in the NCE for many years. When combined with other past, present, and reasonably foreseeable future actions, cumulative impacts from alternative D are expected to be primarily beneficial, with alternative D contributing some adverse, but otherwise beneficial impacts.

Public and Employee Safety

Negative interactions between humans and grizzly bears, while rare, do occur. Every situation is dynamic, and a grizzly bear's reaction depends on a variety of factors, including the proximity between a bear and a human, the type of encounter (i.e., whether the bear is behaving in a defensive or offensive manner), and whether cubs or a valuable food resource are involved, among other considerations. The restoration of grizzly bears in the NCE has raised concerns about safety risks to backcountry recreational visitors and

residents of the NCE because of the potential for negative grizzly bear interactions. In addition, the capture, release, and monitoring of grizzly bears could affect employee safety given the dangerous nature of the activity.

Under the no-action alternative, the continuation of management activities in grizzly bear habitat would result in beneficial impacts on public safety as a result of safety, sanitation, and public outreach efforts and minimal, long-term, adverse impacts on employee safety as a result of the potential for employee injury during monitoring or conflict grizzly bear response activities. The likely eventual loss of grizzly bears in the NCE would eliminate the possibility of any negative human-grizzly bear interactions.

Alternative B could result in adverse impacts on employee safety given the inherent risk of injury during restoration activities, related to helicopter operations and capture and release activities associated with grizzly bears. The probability of these adverse impacts occurring would diminish over time as employees become more experienced in the activity. Periodic hazing, relocation, or removal of conflict grizzly bears would also result in adverse impacts on employee safety.

Alternative B would result in adverse impacts on public safety as a result of the increased potential, albeit very low, for human-grizzly bear conflicts because of the increased number of grizzly bears in the ecosystem. The implementation of safety, sanitation, and public outreach efforts, and conflict grizzly bear management would further mitigate the potential for adverse impacts resulting from human-grizzly bear conflicts. Present and reasonably foreseeable future actions would contribute both beneficial and adverse impacts. Overall, cumulative effects on public and employee safety under alternative B would be adverse and beneficial with alternative B contributing a slight adverse increment.

Alternative C could result in adverse impacts on employee safety related to helicopter operations and capture and release activities associated with grizzly bear restoration. The probability of these adverse impacts occurring would diminish in the long term as initial restoration efforts that release multiple grizzly bears into the NCE each season give way to more intermittent additional releases as necessary. Under alternative C, restoration activities in grizzly bear habitat would result in adverse impacts on public safety in both the primary and adaptive management phases because of the slightly increased potential for human-grizzly bear conflicts from the increased number of grizzly bears in the ecosystem. The potential for conflicts to occur is nonetheless expected to remain relatively low because the low number and density of grizzly bears on the landscape would limit the probability that visitors would encounter grizzly bears. Present and reasonably foreseeable future actions, as analyzed above, would contribute beneficial and adverse impacts, but in aggregate these impacts would be beneficial. Overall, cumulative effects on public and employee safety under alternative C would be long-term and beneficial, with alternative C contributing a slight adverse increment to the overall beneficial cumulative impact.

Alternative D could result in similar types of adverse impacts on employee safety to those described under alternative C; however, given the much larger number of bears handled, the potential for impacts would be much larger. The probability of these adverse impacts occurring would diminish over time and would be limited to relocation and removal of conflict grizzly bears because no additional releases would occur once the restoration goal of 200 grizzly bears is achieved. Under alternative D, restoration activities in grizzly bear habitat could result in long-term, adverse impacts on visitor safety as a result of the increased potential for human-grizzly bear conflicts because of the increased number of grizzly bears in the ecosystem. The potential for conflicts to occur would be greater during the primary phase of alternative D than under alternative C because of the greater intensity of initial restoration efforts and the shorter time frame for achieving the restoration goal of 200 grizzly bears. Present and reasonably foreseeable future actions, as analyzed above, would contribute beneficial and adverse impacts, but in aggregate, the impacts would be beneficial. Overall, cumulative effects on public and employee safety

under alternative D would be beneficial, with alternative D contributing a slight adverse increment to the overall beneficial cumulative impact.

Socioeconomics

The NCE consists of an expansive and largely undeveloped wildland area that spans the crest of the Cascade Range, extending from the more populated, industrialized, urban areas of the Puget Sound region to the more rural, agricultural, and natural resource-based economies of the Okanogan Highlands and Columbia Plateau. The restoration of grizzly bears in the NCE has raised concerns about economic impacts on natural resource-based industries such as mining and logging. Impacts related to depredation of livestock or agriculture, such as fruit orchards, could also result. In addition, grizzly bear restoration could affect revenue to local businesses from changes in tourism.

Under the no-action alternative, no socioeconomic impacts would occur because grizzly bears would not be restored into the NCE.

Alternative B would contribute both adverse and beneficial, albeit negligible, impacts on employment, communities, agriculture, cattle grazing, tourism, timber harvesting, and mining as the result of the release of 10 grizzly bears into the NCE over 2 years. More NPS, FWS, and USFS staff would be required during the primary phase to implement the project and educate the public. Tourism could be beneficially affected because grizzly bears may draw more tourists to the area; however, it could also be negatively affected because some areas may be temporarily and intermittently closed to tourists or some visitors may choose to avoid the NCE because of the presence of grizzly bears. Agriculture and livestock grazing would be unlikely to be affected during the primary phase given the small number of bears that would be released under this alternative, relative distance that these operations are located from potential grizzly bear release sites, and the potential for depredation compensation. Impacts on timber harvests and mining operations would be intermittent because of the small number of bears present relative to the total amount and location of these types of operations. Present and reasonably foreseeable future actions would contribute both beneficial and adverse impacts, as analyzed above. Cumulative effects on socioeconomics under alternative B would be beneficial overall, with alternative B likely contributing very limited adverse impacts based on the small number of bears released into the NCE, though it could provide some benefits related to tourism.

Under alternative C, impacts would be similar but incrementally greater than those impacts described under alternative B. More NPS, FWS, and USFS staff would be required during both the primary phase and adaptive management phase to implement restoration. Tourism could be beneficially affected because grizzly bears could draw more tourists to the area; it could also be negatively affected because some additional areas may be closed to tourists on an intermittent and temporary basis. Agriculture and livestock grazing would be more likely to be affected because more bears would be released under this alternative; however, given depredation compensation programs and the relative distance that these operations are located from potential grizzly bear release sites, these impacts are still anticipated to result in few if any adverse impacts. Impacts on timber harvests and mining operations would still be intermittent and short term because of the small number of bears present relative to the total amount and location of these types of operations. Present and reasonably foreseeable future actions would contribute beneficial and adverse impacts, as analyzed above. However, overall, cumulative effects on socioeconomics under alternative C would be negligible, with alternative C contributing some adverse impacts on socioeconomic resources, although benefits, especially to tourism, are also expected as some additional visitors may come to the NCE to see grizzly bears.

Under alternative D, more NPS, FWS, and USFS staff would be required during the primary phase to implement the project and educate the public compared to alternative C. Tourism could be more

beneficially affected under this alternative because a greater number of grizzly bears in a shorter period (25 years) may draw more tourists to the area. However, the increased presence of bears could slightly negatively impact some tourists because some additional areas may be temporarily and intermittently closed to during the primary phase. Agriculture and livestock grazing would be more likely to be affected during the primary phase because more bears would be released; however, given the relative distance that these operations are located from potential grizzly bear release sites and the potential for depredation compensation, these impacts are still anticipated to result in few if any adverse impacts. Impacts on timber harvests and mining operations would be similar to those described under alternative C. Present and reasonably foreseeable future actions would contribute beneficial and adverse impacts. Overall, cumulative actions would result in both adverse and beneficial impacts on employment, income, and sales. Alternative D would contribute the same impacts as described above under alternative C, although many impacts on socioeconomic resources would likely occur earlier because of the accelerated rate at which the restoration goal (200 bears) would be achieved.

Ethnographic Resources

Ethnographic resources are landscapes, objects, plants and animals, or sites and structures that are important to a people's sense of purpose or way of life. Ethnographic resources have special importance for specific groups of people different from the general public. The grizzly bear is an important part of tribal culture and history in the Northwest. The decline or restoration of grizzly bears in the NCE would be likely to affect ethnographic resources in various ways.

Under alternative A, the no-action alternative, grizzly bears would not repopulate the NCE, and no actions would be taken to relocate grizzly bears to the ecosystem, leading to permanent, adverse impacts on ethnographic resources in terms of the absence of a species that is itself an ethnographic resource. No potential adverse impacts are expected on other ethnographic resources related to traditional hunting and gathering because no bears would be released.

Under alternative B, the initiation of grizzly bear restoration would result in the restoration of an ethnographic resource largely absent from the NCE. Alternative B would result in benefits on ethnographic resources, but the rate of these benefits would take longer to fully achieve, based on the small number of bears released under alternative B. Adverse impacts on other ethnographic resources could occur because of the potential for reduced access during the proposed management activities associated with the release of grizzly bears. However, bears would be released in one remote location with consideration of tribal access to that site, and those areas would be avoided to the extent possible. The benefits of the alternative would contribute to the beneficial impacts from other projects and result in overall beneficial cumulative effects by ensuring that grizzly bears continue to be present in the NCE. Overall, the benefits provided by alternative B would likely offset any minimal, adverse impacts on ethnographic resources that may occur.

Alternative C would have long-term benefits on ethnographic resources by ensuring the continuation of the presence of the grizzly bear—an important ethnographic resource within the NCE; however, it would take many years for the full benefits to be achieved. Some adverse impacts on other ethnographic resources could occur because of reduced access during the management activities associated with the release of grizzly bears. However, the agencies would take steps to reduce the potential conflict with tribal use of areas. Avoidance of tribal use areas during release site identification would help reduce potential adverse impacts. The overall benefits of restoring grizzly bears would contribute to the beneficial impacts from other projects and result in beneficial cumulative effects. Overall, alternative C would largely result in beneficial impacts by restoring an ethnographic resource and would seek to limit adverse impacts associated with access limitations.

Under alternative D, impacts on ethnographic resources would be long term and beneficial as a result of the restoration of the grizzly bear population within the NCE. These beneficial impacts would be achieved within the lifetime of some tribal members—a faster rate than under other alternatives. Some adverse impacts on other ethnographic resources could occur because of access limitations during the proposed release of grizzly bears. As described above, efforts would be made to avoid areas of tribal use to the extent possible to help avoid access restrictions. Given the number of bears released and the years of active restoration activity, the likelihood that access restrictions could affect tribal use areas is highest compared to the other action alternatives. Alternative D would contribute to the beneficial impacts from other projects and result in beneficial cumulative effects by ensuring that grizzly bears continue to be present. Overall, alternative D would benefit ethnographic resources similar to alternative C, although it would achieve restoration at a faster rate. However, alternative D has a higher chance of adverse impacts related to access restrictions during the initial phase of restoration. Overall cumulative effects on ethnographic resources would be beneficial, and alternative D would contribute a beneficial increment to these cumulative impacts.

Areas outside the NCE

In the event that the option to designate the NCE population of grizzly bears as a section 10(j) experimental population is selected, additional management measures may become available to managers to use non-lethal measures to reduce impacts on grizzly bears that move outside NCE or to mitigate human-grizzly bear conflicts. Bears that move outside of what is considered suitable habitat would be recaptured and moved back to the NCE if at all possible. Based on existing 4(d) rules, managers and landowners could take actions to mitigate human-grizzly bear conflicts, including using hazing and killing bears. These types of actions could reduce the bear population; however, the expected likelihood of these impacts is low based on the low likelihood of bears moving out of the NCE. It is expected that any mortality associated with bears moving outside the NCE would be 2%–4% of the restored population. The implementation of a 10(j) designation could help mitigate impacts on visitor use and recreational use, public and employee safety, and socioeconomics, while helping to ensure a restored grizzly bear population in the NCE.

SCOPING PROCESS AND PUBLIC PARTICIPATION

Regulations implementing NEPA require an “early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action” (40 Code of Federal Regulations [CFR] § 1501.7). To determine the scope of issues to be analyzed in depth in this draft plan/EIS, the NPS and FWS conducted internal and agency scoping and formal public scoping. The NPS and FWS used the scoping process to inform the development of alternatives and to identify the issues and impact topics carried forward for analysis in this draft plan/EIS.

On October 1, 2014, the NPS and FWS invited the USFS and Washington Department of Fish and Wildlife (WDFW) to participate as cooperating agencies in the development of this draft plan/EIS. A two-day internal scoping meeting was held on October 21 and 22, 2014, to discuss the development of a grizzly bear restoration draft plan/EIS for the NCE. During the meeting, NPS, FWS, USFS, and WDFW identified the purpose of and need for action, management objectives, issues, and impact topics, and preliminary alternative approaches. They also discussed cooperating agency roles and involvement and the public scoping process.

The public scoping period for this draft plan/EIS began on February 19, 2015, with publication of the Notice of Intent in the *Federal Register* (Volume 80, Number. 33) and continued until March 26, 2015. Six public scoping open houses were held during the scoping period, in Winthrop, Okanogan, Wenatchee,

EXECUTIVE SUMMARY

Cle Elum, Seattle, and Bellingham, Washington. During the scoping period, 2,881 pieces of correspondence were received. Following the public scoping period, the NPS reviewed all public comments and developed a Comment Analysis Report to compile and correlate similar public comments into a format useable by decision-makers and the planning team. The Comment Analysis Report provides assistance in organizing, clarifying, and addressing technical information pursuant to NEPA regulations and in identifying the topics and issues to be evaluated and considered throughout the planning process.

Upon publication of the notice of availability of the draft plan/EIS in the *Federal Register*, a news release was provided to the media outlets who received the news release announcing the Notice of Intent in February 2015. Notice of publication of the draft plan/EIS was provided to media, interested individuals, and organizations via the NPS and FWS standard mailing /distribution lists and other means. The draft plan/EIS will be subject to a public review and comment period lasting 60 days, after which time all comments received will be reviewed and analyzed for incorporation into the final plan/EIS.

TABLE OF CONTENTS

Chapter 1: Purpose of and Need for Action 1

Introduction	1
Purpose of and Need for Action	3
Purpose of the Plan / Environmental Impact Statement	3
Need for Action	3
Objectives in Taking Action	3
Description of the Area of Analysis	4
Background	4
Grizzly Bears in the Western United States	5
Grizzly Bears in the North Cascades Ecosystem	5
Status of Grizzly Bears in Other U.S. Ecosystems	6
Issues and Impact Topics Retained for Detailed Analysis	8
Issues and Impact Topics Dismissed from Further Analysis	10
Agency Coordination	13
Statutes, Policies, and Plans Governing Grizzly Bear Restoration	14

Chapter 2: Alternatives 19

Introduction	19
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	19
Overview of Action Alternatives	21
Elements Common to All Action Alternatives	22
Restoration Population Goal	22
Conflict Grizzly Bear Management	22
Capture, Release, and Monitoring of Grizzly Bears	22
Public Education and Outreach	26
Replacement and Additional Releases of Grizzly Bears	26
Access Management	26
Habitat Management	26
Alternative B: Ecosystem Evaluation Restoration	27
Primary Phase	27
Adaptive Management Phase	27
Alternative C: Incremental Restoration	28
Primary Phase	28
Adaptive Management Phase	28
Alternative D: Expedited Restoration	29
Primary Phase	29
Adaptive Management Phase	29
Endangered Species Act Section 10(j) Designation Rulemaking Option	29
Alternatives Considered but Dismissed from Further Detailed Analysis	35

TABLE OF CONTENTS

Washington Only Restoration	35
Delayed Implementation of Washington Only Restoration	36
Natural Recovery	36
Ecosystem Restoration and Habitat Preservation Only	36
Social Tolerance-Based Grizzly Bear Restoration	37
Section 10(j) Population with Citizen Management	37
Capture and Release of Healthy, Young Females Only	38
Chapter 3: Affected Environment	39
Introduction	39
General Project Setting	39
Wildlife and Fish	41
Grizzly Bears	41
Other Wildlife and Fish	48
Climate Change	51
Wilderness Character	52
Wilderness in the North Cascades National Park Service Complex	53
United States Forest Service	59
Visitor Use and Recreational Experience	62
Visitor Use in the North Cascades National Park Service Complex	62
Visitor Use of National Forest Lands in the North Cascades Ecosystem	63
Recreation on Federal Lands within the North Cascades Ecosystem	63
Public and Employee Safety	67
Public and Employee Safety in the North Cascades National Park Service Complex	67
Socioeconomics	69
Human Activity in the Region of Influence and Influence on Bears	69
Ethnographic Resources	76
Chapter 4: Environmental Consequences	79
Introduction	79
General Methodology for Assessing Impacts	79
General Analysis Methodology and Assumptions	79
Assessing Impacts Using Council on Environmental Quality Criteria	79
Assumptions	80
Jurisdiction and Compliance	81
Cumulative Impacts	81
Cumulative Impact Scenario	86
Grizzly Bears	88
Methods and Assumptions	88
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	88
Alternative B: Ecosystem Evaluation Restoration	90
Alternative C: Incremental Restoration	92

Alternative D: Expedited Restoration	94
Areas outside the NCE	96
Other Wildlife and Fish	97
Methods and Assumptions	97
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	99
Alternative B: Ecosystem Evaluation Restoration	101
Alternative C: Incremental Restoration	106
Alternative D: Expedited Restoration	108
Areas outside the NCE	110
Wilderness Character	111
Methods and Assumptions	111
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	112
Alternative B: Ecosystem Evaluation Restoration	113
Alternative C: Incremental Restoration	117
Alternative D: Expedited Restoration	119
Areas outside the NCE	120
Visitor Use and Recreational Experience	121
Methods and Assumptions	121
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	121
Alternative B: Ecosystem Evaluation Restoration	122
Alternative C: Incremental Restoration	127
Alternative D: Expedited Restoration	129
Areas outside the NCE	130
Public and Employee Safety	131
Methods and Assumptions	131
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	131
Alternative B: Ecosystem Evaluation Restoration	133
Alternative C: Incremental Restoration	138
Alternative D: Expedited Restoration	141
Areas outside the NCE	144
Socioeconomics	144
Methods and Assumptions	145
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	145
Alternative B: Ecosystem Evaluation Restoration	146
Alternative C: Incremental Restoration	151
Alternative D: Expedited Restoration	152
Areas outside the NCE	153
Ethnographic Resources	154
Methods and Assumptions	154
Alternative A: Continuation of Existing Grizzly Bear Management (No Action)	155
Alternative B: Ecosystem Evaluation Restoration	156

TABLE OF CONTENTS

Alternative C: Incremental Restoration	157
Alternative D: Expedited Restoration	158
Areas outside the NCE	159
Chapter 5: Consultation and Coordination	161
History of Public Involvement	161
The Scoping Process	161
Internal Scoping	161
Public Scoping	161
Agency Consultation	163
U.S. Forest Service	163
Washington Department of Fish and Wildlife	163
Washington State Historic Preservation Office	163
Tribal Treaties and Consultation	163
Consultation With Federal and State Legislative Officials	164
Local Government Consultation	164
List of Recipients of the Plan / Environmental Impact Statement	165
Government Agencies	165
Local Libraries	165
List of Preparers and Consultants	166
Other Reviewers	167
Cooperating Agency Team Members	168
References	169
Glossary	191
Index	197

APPENDICES

Appendix A: Potentially Affected Federal and State-Listed Species	
Appendix B: Additional Analysis for USFS Decision-Making Support	
Appendix C: Framework of Relevant Federal and State Laws, Policies, and Plans	
Appendix D: Implementation Costs	
Appendix E: 2002 Interagency Grizzly Bear Committee Guidelines for the North Cascades Ecosystem	
Appendix F: Draft Minimum Requirements Decision Guide Workbook	

LIST OF FIGURES

Figure 1. Area of Analysis	2
Figure 2. Grizzly Bear Staging and Release Areas	24
Figure 3. North Cascades Ecosystem	40
Figure 4. Likely Grizzly Bear Source Populations	46
Figure 5. Wilderness Areas Managed by the National Park Service and U.S. Forest Service in the North Cascades Ecosystem	54
Figure 6. Recreational Opportunities in the North Cascades Ecosystem	64
Figure 7. Population Density in the North Cascades Ecosystem	71
Figure 8. Gateway Communities in the North Cascades Ecosystem	72
Figure 9. Economic Activity in the North Cascades Ecosystem	75
Figure 10. Approximate Alternative C Grizzly Bear Population Projection	93
Figure 11. Approximate Alternative D Grizzly Bear Population Projections	95
Figure 12. Potential Release Areas and Federal Wilderness Areas in the North Cascades Ecosystem	115
Figure 13. Potential Release Areas and Recreational Sites in the North Cascades Ecosystem	124
Figure 14. Agriculture, Timber, and Mining Operations in Relation to Grizzly Bear Release Areas	148

LIST OF TABLES

Table 1. Estimate of Flight Time Over Wilderness Areas	25
Table 2. Summary of Action Alternative Elements	32
Table 3. Recommended Habitat Rankings for Use in the Evaluation of Core Areas in Grizzly Bear Management Units in the North Cascades Ecosystem	44
Table 4. Wilderness Acreage on National Park Service Land in the North Cascades Ecosystem	55
Table 5. Wilderness Acreage on U.S. Forest Service Land in North Cascades Ecosystem	59
Table 6. Total Population	70
Table 7. Population of Gateway Communities in or Adjacent to the North Cascades Ecosystem	73
Table 8. Cumulative Actions and Potential Impacts on Resources in the Project Area	86
Table 9. Estimate of Flight Time Over Wilderness*	116
Table 10. Type of Recreation Activity and Risk of Grizzly Bear Attack in Yellowstone National Park	137

ACRONYMS

AUM	animal unit month
BE	Bitterroot Ecosystem
BMU	Bear Management Unit
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CYE	Cabinet-Yaak Ecosystem
dba	A-weighted decibel
draft plan/EIS	<i>North Cascades Ecosystem Grizzly Bear Restoration Plan / Environmental Impact Statement</i>
EIS	environmental impact statement
ESA	Endangered Species Act
FR	<i>Federal Register</i>
FWS	U.S. Fish and Wildlife Service
GBPU	grizzly bear population unit
GIS	geographic information system
GMP	general management plan
GPS	global positioning system
GYE	Greater Yellowstone Ecosystem
IGBC	Interagency Grizzly Bear Committee
MOU	Memorandum of Understanding
mph	miles per hour
NCDE	Northern Continental Divide Ecosystem
NCE	North Cascades Ecosystem
NEPA	<i>National Environmental Policy Act</i>
NPS	National Park Service
park complex	North Cascades National Park Service Complex
ROI	region of influence
SE	Selkirk Ecosystem
USFS	U.S. Forest Service
WDFW	Washington Department of Fish and Wildlife



Chapter 1:

P U R P O S E O F A N D N E E D F O R A C T I O N



CHAPTER 1: PURPOSE OF AND NEED FOR ACTION

INTRODUCTION

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

The greater NCE, including its Canadian and U.S. portions, is bounded roughly by the Fraser River on the north, the Okanogan Highlands and Columbia Plateau on the east, Snoqualmie Pass to the south, and the Puget lowlands to the west. Combined, the U.S. and Canadian portions of the greater NCE constitute a large block of contiguous habitat that spans the international border but is isolated from grizzly bear populations in other parts of the two countries. The NCE grizzly bear recovery zone as delineated by the U.S. portion of the ecosystem is hereafter referred to as the NCE, and comprises one of the most intact wildlands in the contiguous United States (figure 1) (Servheen et al. 1991).

*The North Cascades Ecosystem
grizzly bear recovery zone
comprises one of the most intact
wildlands in the contiguous United
States (Servheen et al. 1991).*

The NCE spans the crest of the Cascade Range from the temperate rainforests of the west side to the dry ponderosa pine forests and sage-steppe on the east side. This landscape spans over 10,000 feet of vertical relief, resulting in a high level of variation in climate and topography and a high diversity of species adapted to a wide spectrum of habitats. The area includes extensive tracts of low elevation old growth forest, subalpine meadows, and alpine environments (NPS 2012a). The overall population status of the grizzly bear in the greater NCE is unknown; however, it is highly unlikely that the NCE contains a viable grizzly bear population. Only four detections of grizzly bears have been confirmed in the greater NCE in the past 10 years, all of which occurred in British Columbia and may comprise only 2 individuals (IGBC NCE Subcommittee 2016). Because of the small documented number of grizzly bears, very slow reproductive rate, and other recovery constraints, the grizzly bear in the NCE was found by the FWS to be warranted for uplisting to endangered status, but was precluded by higher-priority listings (FWS 2016a). Given there has been no confirmed evidence of grizzly bears within the NCE in the United States since 1996, (IGBC NCE Subcommittee 2016) any remaining bears in the NCE do not meet the accepted definition for a population (i.e., evidence of 2 adult females with cubs or 1 adult female tracked through two litters) (FWS 2000a).

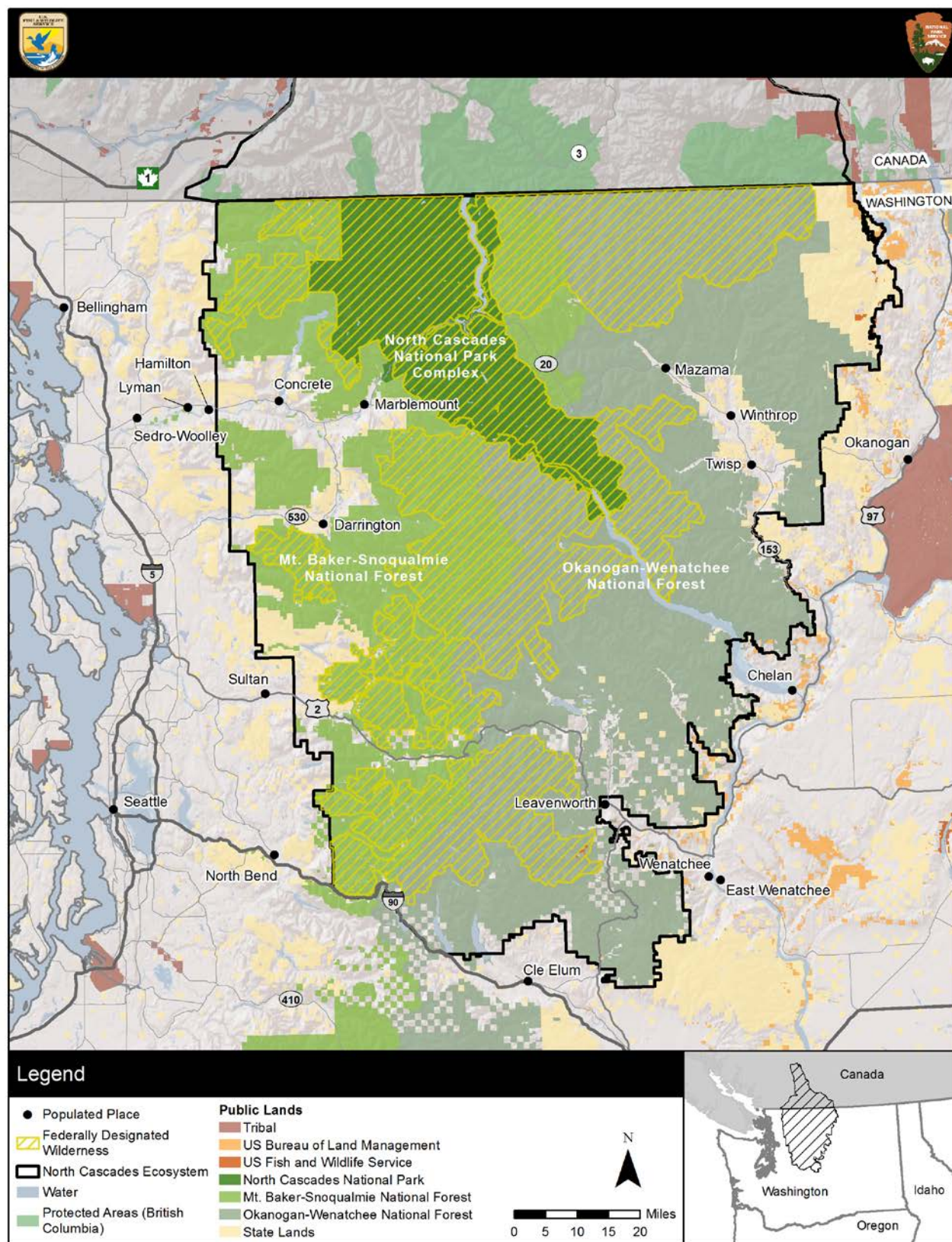


FIGURE 1. AREA OF ANALYSIS

This *North Cascades Ecosystem Grizzly Bear Restoration Plan / Environmental Impact Statement* (draft plan/EIS) evaluates the effects of alternatives for grizzly bear restoration, including potential impacts on wildlife and fish (including grizzly bears), wilderness, visitor use and recreational experience, socioeconomics, public and employee safety, and ethnographic resources. Upon conclusion of the *National Environmental Policy Act* (NEPA) process, an alternative, or a combination of actions described under multiple alternatives, will be selected in a record of decision.

PURPOSE OF AND NEED FOR ACTION

Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1502.13) require that the federal agency responsible for preparing an environmental impact statement (EIS) provide a brief description of its purpose and need. The U.S. Department of the Interior's regulations for implementing NEPA define purpose and need as follows:

- Purpose may refer to the goal or objective that the agency is trying to achieve and should be stated in terms of the desired outcome, to the extent possible (43 CFR 46.420(a)).
- The need for action may be described as the underlying problem or opportunity to which the agency is responding with the action (43 CFR 46.420(a)).

Purpose of the Plan / Environmental Impact Statement

The purpose of this draft plan/EIS is to determine how to restore the grizzly bear to the NCE, a portion of its historical range.

Need for Action

Because the NCE grizzly bears are at risk of local extinction, action is needed at this time to:

- Avoid the permanent loss of grizzly bears in the NCE.
- Contribute to the restoration of biodiversity of the ecosystem for the benefit and enjoyment of present and future generations of people.
- Enhance the probability of long-term survival of grizzly bears in the NCE and thereby contribute to overall grizzly bear recovery.
- Support the recovery of the grizzly bear to the point where it can be removed from the federal list of threatened and endangered wildlife species.

Objectives in Taking Action

Objectives are more specific statements of purpose that provide additional bases for comparing the effectiveness of alternatives in achieving the desired outcomes of an action (NPS 2015a). The objectives of this draft plan/EIS are to

- Restore a grizzly bear population as part of the natural and cultural heritage of the North Cascades.
- Provide Pacific Northwest residents and visitors with the opportunity to again experience grizzly bears in their native habitat.

- Seek to support tribal cultural and spiritual values, as well as environmental and natural resource objectives related to the grizzly bear.
- Expand outreach efforts to inform and involve the public, and build understanding about grizzly bear recovery.

DESCRIPTION OF THE AREA OF ANALYSIS

The following section provides a description of the area of analysis for this draft plan/EIS (see figure 1) and an overview of its resources. Figure 1 depicts the distribution of the various U.S. federal lands that comprise much of the area within the NCE grizzly bear recovery zone.

The area of analysis for this draft plan/EIS is centered on the NCE grizzly bear recovery zone but extends to those areas outside the NCE where grizzly bears may go in the future. All restoration actions would occur in the NCE recovery zone. The NCE covers portions of Chelan, King, Kittitas, Okanogan, Skagit, Snohomish, and Whatcom counties in Washington State. If grizzly bears do move outside the NCE in the future, they would likely be first observed in the non-NCE portions these counties. If bears were to move beyond this area, the range of effects from grizzly bear restoration would be similar to the effects that may be experienced in the counties that comprise the NCE.

The area of analysis for this draft plan/EIS is the NCE grizzly bear recovery zone, which is comparable in size to the state of Vermont, encompassing approximately 9,800 square miles, or 6.1 million acres, within the state of Washington (FWS 1997).

The NCE is comparable in size to the state of Vermont, encompassing approximately 9,800 square miles, or 6.1 million acres, within the state of Washington (FWS 1997). Situated in the core of the area of analysis is the 682,000-acre North Cascades National Park Service Complex (park complex). The park complex includes North Cascades National Park and Ross Lake and Lake Chelan National Recreation Areas, and makes up approximately 11% of the NCE grizzly bear recovery zone. The 641,084-acre Stephen Mather Wilderness comprises approximately 94% of the park complex. The park complex is bounded on the east, west, and south by national forest lands. These lands consist of most of the Mt. Baker-Snoqualmie and Okanogan-Wenatchee National Forests, including nearly 2 million acres of wilderness, and make up roughly 74% of the NCE grizzly bear recovery zone. Approximately 5% of the NCE grizzly bear recovery zone is made up of state lands, and 10% is made up of private lands (FWS 1997).

Combined, the park complex and national forest wilderness areas within the NCE comprise over 2.6 million acres of federally designated wilderness. Adjoining the NCE grizzly bear recovery zone to the north are protected lands in British Columbia, Canada, including approximately 442,300 acres of provincial park land within the Canadian portion of the NCE. By virtue of sheer size and protected status, this international wilderness ecosystem is one of the few places where wolves, wolverines, lynx, and other carnivores still roam. Research indicates it is capable of supporting a self-sustaining grizzly bear population (Lyons et al. 2016; Servheen et al. 1991; Almack et al. 1993).

BACKGROUND

The following section includes background information on grizzly bears in the western United States, a discussion of background information and management concerns related to grizzly bears in the NCE, and a summary of the status of grizzly bear recovery in other ecosystems.

Grizzly Bears in the Western United States

The grizzly bear has a broad range of habitat tolerance and once existed throughout western North America and northern Mexico. Contiguous, relatively undisturbed, mountainous habitat with a high level of topographic and vegetative diversity characterizes most of the areas where populations of grizzly bears remain. The Lewis and Clark Expedition first encountered grizzly bears in the northern Great Plains after departing St. Louis, Missouri, in 1804. The estimated 19th-century population of 50,000 grizzly bears was reduced to fewer than 500 by the 1930s. Today, only five populations survive in the contiguous United States (FWS 1993a), totaling approximately 1,850 grizzly bears (Servheen pers. comm. 2015). Because of the continuing decline of the species, the grizzly bear was listed as threatened under the ESA in 1975. Direct killing, habitat destruction, habitat modification, and range curtailment were identified by the FWS as major contributing factors that led to the decline of the species (FWS 1993a).

Grizzly Bears in the North Cascades Ecosystem

Historical records indicate that grizzly bears once occurred throughout the NCE grizzly bear recovery zone (Bjorkland 1980; Sullivan 1983; Almack et al. 1993). A grizzly bear habitat evaluation of the NCE was conducted from 1986 to 1991 (Almack et al. 1993; Gaines et al. 1994) in response to recommendations made in the 1982 FWS nationwide *Grizzly Bear Recovery Plan*, discussed below. This habitat evaluation and a report by the Interagency Grizzly Bear Committee (IGBC) NCE Subcommittee (Servheen et al. 1991) conclude that the U.S. portion of the NCE contains sufficient habitat quality to maintain and recover a grizzly bear population, and FWS added a chapter specifically regarding the NCE to the nationwide *Grizzly Bear Recovery Plan*. In this chapter, the FWS estimates that a grizzly bear population would be considered viable within the NCE when monitoring indicates that the population is self-sustaining and large enough to offset some amount of human-induced mortality, and reproducing female grizzly bears are distributed throughout the recovery area (FWS 1997). Based on a qualitative assessment by the IGBC technical committee review team, habitat within the NCE was considered to be of sufficient quality and quantity to support a population of 200 to 400 grizzly bears (Servheen et al. 1991). More recent carrying capacity modeling suggests the most plausible carrying capacity for the NCE is approximately 280 bears (Lyons et al. 2016). The agencies established a restoration target of 200 bears in the NCE for the purposes of this draft plan/EIS after considering the NCE's carrying capacity and the professional judgment of grizzly bear experts. Restoring a population of this size would likely take decades. This restoration target is not a recovery goal for purposes of the ESA. Recovery goals are determined through a separate process from this EIS.



Last photographed grizzly bear from the U.S. portion of the NCE (1967)

Despite the historical presence of grizzly bears in the NCE, and the availability of sufficient habitat to recover and maintain a viable population, there is no confirmed evidence of current grizzly bear presence within the NCE grizzly bear recovery zone in the United States (IGBC NCE Subcommittee 2016). The population in the adjacent British Columbia portion of the NCE is estimated to be about six grizzly bears (MFLNRO 2012). Only four confirmed grizzly bear sightings have been documented within the NCE during the past decade; three of these observations were of the same bear, and one observation was of a second bear (IGBC NCE Subcommittee 2016). All of these sightings have been in British Columbia. It

should be noted that grizzly bears in the portion of the NCE in British Columbia are also considered threatened by the British Columbia government. This area, highly fragmented by roads, is surrounded to the west, north, and east by grizzly bear population units (GBPUs) where bears are either threatened or extirpated. Therefore, the likelihood of bears naturally emigrating in the NCE from areas within British Columbia is negligible (Hamilton pers. comm. 2016a).

Since 1990, the FWS has received and reviewed five petitions requesting a change in status for the North Cascades grizzly bear population (55 *Federal Register* [FR] 32103, August 7, 1990; 56 FR 33892, July 24, 1991; 57 FR 14372, April 20, 1992; 58 FR 43856, August 18, 1993; and 63 FR 30453, June 4, 1998). In response to these petitions, the FWS determined that grizzly bears in the NCE warrant a change to endangered status; however, FWS has continued to find that although these petitions are warranted, uplisting is precluded by higher priority listings as documented through the FWS annual Candidate Notice of Review process (FWS 2016a).

In 2016, the FWS continued to find that reclassifying grizzly bears in this ecosystem as endangered is warranted but precluded, and assigned a listing priority number of 9 for the uplisting of the North Cascades population. However, the FWS also acknowledged the possibility that there is no longer a population present in the ecosystem, and restoration efforts (possibly including designation of an experimental population under section 10(j) of the ESA) may be used to establish a viable population in this recovery zone (FWS 2016a).

The main threat to grizzly bears in the NCE is the limited number of bears, with resulting demographic and genetic risks. Natural recovery in the NCE is challenged by the absence of verified reproduction and isolation from any contiguous populations in Canada and the United States.

Status of Grizzly Bears in Other U.S. Ecosystems

Greater Yellowstone Ecosystem. At the time of the grizzly bear listing under the ESA, the southernmost—and most isolated—population was in the GYE, where 136 grizzly bears were thought to live in the mid-1970s. The estimated GYE grizzly bear population increased from as few as 136 in 1975 to a 2014 estimate of approximately 757 (Servheen pers. comm. 2015; Haroldson, van Manen, and Bjornlie 2014), and the grizzly bears have gradually expanded their occupied habitat by more than 100% (NPS 2016a). As monitored by the Interagency Grizzly Bear Study Team, the criteria used to determine whether the population within the GYE has recovered include estimated population size, distribution of females with cubs, and mortality limits as outlined in the 1993 *Grizzly Bear Recovery Plan* (FWS 1993a). The number of females producing cubs has remained relatively stable since 1996, suggesting that the ecosystem may be at or near ecological carrying capacity for grizzly bears (NPS 2016b). Based on the status of the GYE grizzly bear population, the FWS has determined that a change in its listing status under ESA is appropriate. In March, 2016, the FWS issued a proposed rule to remove the GYE population of grizzly bears from the federal list of endangered and threatened wildlife (81 FR 13173–13227, March 11, 2016).

Northern Continental Divide Ecosystem. The NCDE includes the Bob Marshall Wilderness Complex and Glacier National Park in northwestern Montana, and adjacent areas in Canada. The grizzly bear population in this ecosystem numbers approximately 1,000 animals and continues to grow each year (FWS 2015a; Costello, Mace, and Roberts 2016). Similar to the GYE, the FWS *Grizzly Bear Recovery Plan* sets forth criteria for grizzly bear recovery actions in the NCDE and establishes benchmarks by which to gauge species recovery, including population size, sex ratio, number of females with cubs, mortality limits, and geographical distribution within the NCDE (FWS 1993a).

As of 2013, a draft conservation strategy for grizzly bears in the NCDE was available for public review. This document describes management and monitoring programs that would be put into place if and when the NCDE population is delisted from the ESA. These measures are designed to maintain a recovered grizzly bear population in the NCDE. The conservation strategy does not change the legal status of the NCDE grizzly bear population. The FWS will not sign the conservation strategy or delist the NCDE population until state and federal agencies demonstrate their commitment to implementing the conservation strategy (FWS 2015a).

Selkirk Ecosystem. The SE includes approximately 2,200 square miles of northeastern Washington, northern Idaho and southern British Columbia, Canada. Approximately 1,040 square miles of this area is within British Columbia (IGBC 2015a). Similar to other grizzly bear recovery zones, the FWS Grizzly Bear Recovery Plan establishes specific recovery targets and guidelines for the SE (FWS 1993a). The current grizzly bear population in the SE is estimated at approximately 80 grizzly bears (Proctor et al. 2012) and is approximately equally divided between the Canadian and U.S. portions of the ecosystem (IGBC 2015a).

Cabinet-Yaak Ecosystem. The CYE encompasses approximately 1,000 square miles in the Yaak River drainage and 1,620 square miles in the Cabinet Mountains of northwestern Montana and northern Idaho. The ecosystem is bisected by the Kootenai River, with the Cabinet Mountains to the south and the Yaak River area to the north, and is contiguous with grizzly bear habitat in Canada (IGBC 2015b).

Grizzly bear research was conducted in the Cabinet Mountains from 1983 to 1988 to determine habitat use and status of the population. The study concludes that the probability of the loss of this population, which at the time numbered 15 grizzly bears, within the following few decades was high (Kasworm and Manley 1988). In 1990, the FWS initiated the NEPA process to analyze alternatives for testing recovery techniques for the grizzly bear population in the Cabinet Mountains. The short-term objective of the proposal was to test techniques for augmenting the existing grizzly bear population, while the long-term objective was to recover the grizzly bear population in the CYE as required by law. The alternative selected as part of this process was to place 2 subadult female grizzly bears from southeastern British Columbia into the Cabinet Mountains in 1990, followed by 2 additional grizzly bears in 1991 (FWS 1990). Between 1990 and 1994, 4 female grizzly bears were relocated to the Cabinet Mountains from southeastern British Columbia as the initial test of the augmentation program. Through DNA monitoring by the FWS, it was determined that the grizzly bear augmented to the Cabinet Mountains in 1993 remained in the Cabinet Mountain Range, successfully reproduced, and her first generation offspring had also reproduced (Kasworm et al. 2007). Based on the success of initial augmentation efforts, 7 additional female grizzly bears and 3 male grizzly bears were moved from southeastern British Columbia to the Cabinet Mountains from 2005 through 2012 (Kasworm et al. 2013). The current grizzly bear population in the CYE is estimated at approximately 48 to 50 animals (Kendall et al. 2016). In its *2015-2017 Selkirk and Cabinet-Yaak Grizzly Bear Ecosystems Plan*, the IGBC recommends continuation of the Cabinet Mountains augmentation with at least one additional subadult female grizzly bear per year, if available, and also calls for development of a conservation strategy to manage and maintain a recovered grizzly bear population in this ecosystem (IGBC 2015b).

Bitterroot Ecosystem. The BE is one of the largest contiguous blocks of public land remaining in the lower 48 states. The core of the ecosystem contains three designated wilderness areas, which make up the largest block of wilderness habitat in the Rocky Mountains south of Canada. Of the remaining unoccupied grizzly bear habitat in the lower 48 states, this area is considered to have the best potential for grizzly bear recovery, primarily due to the large core of designated wilderness areas. However, grizzly bears do not currently occupy the BE. The last verified grizzly bear in the BE was in 2007, when a black bear hunter mistakenly shot a young male grizzly bear. Through DNA analysis, the grizzly bear was documented to

be from the SE (Servheen pers. comm. 2015). Although there are other occasional reports of grizzly bear sightings in the BE, none have been verified (IGBC 2015c).

The FWS Grizzly Bear Recovery Plan directs the agency to pursue grizzly bear recovery in the BE, along with the other recovery areas discussed above (FWS 1993a). The FWS prepared an EIS and signed a final rule and record of decision in November 2000 to reintroduce a nonessential experimental population of 25 grizzly bears to the BE (FWS 2000b). In June 2001, the FWS reevaluated the decision to reintroduce grizzly bears and published a notice of intent and proposed rule to select the “natural recovery” alternative. The proposed rule would have allowed for protection of grizzly bears that may move into the BE on their own from other areas as a threatened species under the ESA, but would not have allowed for the reintroduction of grizzly bears. The rule was never finalized and therefore the record of decision is still in place to introduce a nonessential experimental population of 25 grizzly bears (Servheen pers. comm. 2015).

ISSUES AND IMPACT TOPICS RETAINED FOR DETAILED ANALYSIS

NEPA regulations require an “early and open process for determining the scope of issues to be addressed and for identifying the significant issues ...” (40 CFR 1501.7). An issue or environmental issue can be a problem, concern, conflict, obstacle, or benefit that would result if the proposed action or alternatives, including the no-action alternative, are implemented. With respect to grizzly bear restoration in the NCE, the NPS, FWS, cooperators, and the public identified issues related to the following resources or values: wildlife and fish, wilderness character, recreational use and experience, socioeconomics, public and employee safety, and ethnographic resources. Impact topics are headings that correspond to affected resources and allow the reader to track the issues, current condition, and potential impacts related to a specific resource through the various chapters of the draft plan/EIS.

Wildlife and Fish. The NCE is characterized by a high level of variation in climate and topography, resulting in a wide spectrum of habitats ranging from dense, mixed-conifer forests to subalpine meadows to shrub steppe. The NCE is thus home to a high diversity of fish, birds, and other wildlife that have adapted to these diverse habitats. Wildlife could be affected by noise and human-related disturbance associated with the capture and release of grizzly bears. Wildlife or fish species such as elk and deer, black bear, and trout could be affected in terms of grizzly bear predation or competition for resources. Therefore, this impact topic was retained for analysis.

Wilderness Character. Wilderness character can be generally described as the combination of biophysical, experiential, and symbolic qualities that distinguishes wilderness from all other lands. Qualities of wilderness character, derived from the Wilderness Act of 1964, are that the land is untrammeled, undeveloped, natural, offers solitude or unconfined or primitive recreation, or provides other features of value. Sections 2(a) and 4(b) of the Wilderness Act provide a mandate for each agency administering any area designated as wilderness to be responsible for preserving its wilderness character.

Together, the park complex and surrounding national forest wilderness areas protect over 2.6 million acres of federally designated wilderness within the NCE. Grizzly bear restoration activities could affect wilderness character and values in both adverse and beneficial ways. If grizzly bears are released and monitored in the NCE, the use of aircraft in designated wilderness areas could adversely affect a number of characteristics, including the undeveloped quality and opportunities for solitude or primitive and unconfined recreational qualities of wilderness character. These impacts would be temporary in nature and variable in quantity



A portion of the Pacific Crest Trail in North Cascades National Park

and duration, since initial restoration activities would require a greater number and frequency of helicopter flights relative to the longer-term adaptive management phase. Restoration of grizzly bears would also increase the overall biodiversity present in wilderness areas and the overall benefits to the natural quality of wilderness character and other features of value. Because grizzly bear restoration actions could result in varying impacts on wilderness, this impact topic was retained for analysis.

Visitor Use and Recreational Experience. The park complex and the national forests within the NCE provide a diverse array of recreational opportunities including hiking, backpacking, camping, climbing, fishing, horseback riding, bicycling, boating, winter sports, and wildlife viewing. Opportunities for hunting are available in the NPS national recreation areas and on the national forests, and off-road vehicle use is permitted on the national forests (USFS 2015a, 2015b). The park complex offers a variety of educational and interpretive programs, visitor facilities, and lodging facilities (NPS 2012b).

The restoration of grizzly bears to the NCE could increase visitation and recreational use of the park and national forests as visitors seek to experience grizzly bears in their native habitat. Restoration actions that result in an increased grizzly bear population could also affect recreational opportunities for visitors who do not wish to encounter grizzly bears. Therefore this topic was retained for analysis.

Public and Employee Safety. Negative interactions between humans and grizzly bears, while rare, do occur. Every situation is dynamic and a grizzly bear's reaction depends on a variety of factors including the proximity between a bear and a human, the type of encounter (i.e., whether the bear is behaving in a defensive or offensive manner), and whether cubs or a valuable food resource are involved, among other considerations (Herrero 2002).

The restoration of grizzly bears in the NCE has raised concerns about safety risks to residents living in and adjacent to the NCE, as well as backcountry recreationists and other visitors because of the potential for negative grizzly bear interactions. Although rare, human injuries from grizzly bears can and have occurred in other ecosystems. For example, in the CYE and SE, where there are low-density recovering populations of grizzly bears (48–50 and 80 bears, respectively), one human injury caused by a grizzly bear has been recorded in the last 36 years (Kasworm pers. comm. 2016a). In addition, the capture,

release, and monitoring of grizzly bears could affect employee safety because of the dangerous nature of the activity. Therefore, this impact topic was carried forward for analysis.

Socioeconomics. The NCE consists of an expansive and largely undeveloped wildland area that spans the crest of the Cascade Range from the more populated, industrialized, urban areas of the Puget Sound region to the more rural, agricultural, and natural resource-based economies of the Okanogan Highlands and Columbia Plateau.

The restoration of grizzly bears in the NCE has raised concerns about economic impacts on natural resource-based industries such as mining and logging. Concerns about depredation of livestock or agriculture, such as fruit orchards, have also been raised. In addition, revenue to local businesses may be affected due to changes in tourism and hunting revenue as a result of grizzly bear restoration. Therefore this topic was retained for analysis.

Ethnographic Resources. Ethnographic resources are landscapes, objects, plants and animals, or sites and structures that are important to a people's sense of purpose or way of life. Ethnographic resources have a special importance for a specific group of people different from the general public (NPS 2015b).

The grizzly bear is an important part of tribal culture and history in the Northwest. The decline or restoration of grizzly bears would be likely to affect ethnographic resources in various ways. For example, the loss of grizzly bears from the ecosystem would result in the loss of an ethnographic resource. However, the restoration of grizzly bears could restrict access to traditional hunting or gathering sites, adversely affecting other ethnographic resources. Therefore, this resource topic was retained for analysis.

Climate Change. Climate change, specifically how a changing climate is expected to affect grizzly bears and grizzly bear restoration efforts over time, is addressed in the individual impact topics where it is relevant. This is because the project is not expected to result in impacts on climate, but climate change occurring as a result of other factors could have pronounced impacts on certain resources such as wildlife and fish. According to the U.S. Environmental Protection Agency, the climate of the Pacific Northwest is changing. Over the last century, the average annual temperature has risen by approximately 1.3°F. Average annual temperature in the region is projected to increase by 3–10°F by the end of the century, with the largest increases expected in the summer. Declines in snowpack and streamflow have been observed throughout the Cascade Range in recent decades. In Washington, record low snowpack values were measured in April 2015 and in 74% of long-term monitoring stations (USEPA 2015). Future climate change impacts would likely be compounded by pressures related to the region's rapidly growing human population. These changes may affect management decisions in the ecosystem for many resources, including grizzly bears.

ISSUES AND IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

The following issues and impact topics were dismissed from detailed consideration in the draft plan/EIS.

Air Quality. The NCE lies in the path of prevailing westerly winds blowing from rapidly growing urban-industrial and agricultural areas in Puget Sound. Pollutants such as particulate matter, ozone, acid deposition, mercury, and pesticides have been detected within the park complex. Park managers are cooperatively involved with the U.S. Geological Survey, the NPS Air Resources Division, and others to assess air pollution impacts and protect air quality related resources. The air resources management program at North Cascades includes monitoring, research and data dissemination (NPS 2015c). Some of the activities associated with grizzly bear restoration may result in fossil fuel consumption, such as the

use of vehicles and helicopters to carry out prescribed management activities. However, the increase in emissions from these activities would be minimal and short term, resulting in only slight impacts on regional air quality relative to existing conditions. This topic was therefore dismissed from further analysis.

Greenhouse Gas Emissions. There is strong evidence linking global climate change to human activities, especially greenhouse gas emissions associated with the burning of fossil fuels (IPCC 2014). Some of the activities that could be associated with grizzly bear restoration may result in fossil fuel consumption, such as the use of vehicles and helicopters to carry out prescribed management activities. However, greenhouse gas emissions associated with the plan would be negligible because of the small number of vehicle and helicopter trips that are anticipated and the lack of any other sources of greenhouse gases resulting from grizzly bear restoration. Therefore, the issue of the contribution of grizzly bear restoration activities to climate change through greenhouse gas emissions was dismissed from further analysis. As noted in the discussion of issues, any anticipated effects of climate change on the resources studied in this draft plan/EIS will be discussed in the affected environment and environmental consequences for each resource.

Vegetation. Grizzly bear restoration activities could result in very limited vegetation removal or management associated with creating safe landing zones and release areas or treating invasive plants. A number of measures, as described in chapter 2, would be implemented minimize the impacts that could occur. No impacts on federal or state-listed plant species are expected. Potential impacts on vegetation as wildlife habitat are discussed under the “Wildlife and Fish” impact topic.

Grizzly bears are opportunistic omnivores that eat a wide diversity of plant and animal species (Jacoby et al. 1999; Gunther et al. 2014). Grizzly bears in ecosystems with similar food economies to the NCE have been shown to rely heavily on herbaceous vegetation, graminoids, forbs, berries and roots, depending on the season (Munro et al. 2006; McLellan and Hovey 1995). Grizzly bears have also been shown to act as important vectors for dispersal of seeds for numerous plant species that produce fleshy fruits (Willson and Gende 2004). While the restoration of grizzly bears would result in impacts on native vegetation in the NCE, the expected density of grizzly bears on the landscape is not expected to result in any impacts on native vegetation species on a population level. Further, the effects of grizzly bear foraging on vegetation would represent a native ecological process in the NCE. Since any impacts on native vegetation are expected to be minimal, this topic was dismissed from further analysis.

Federal and State-listed Species. The agencies evaluated the potential impacts on a number of federal and state-listed species to determine whether potential impacts warranted their full analysis in the draft plan/EIS. The following species were initially analyzed: Canada lynx, gray wolf, northern spotted owl, marbled murrelet, bull trout, and a number of listed salmonids. Based on the inclusion of best management practices as described in chapter 2, such as pre-staging and release site-assessments for listed species presence and FWS-established helicopter operations restrictions in proximity to northern spotted owl and marbled murrelet suitable habitat, the agencies determined that the potential impacts would be limited in duration and intensity. Expected duration of impacts on individual species would be limited to a few minutes at any given time, and the intensity of the impact would be limited to disturbance and potential temporary (minutes to hours) avoidance of active restoration areas. In addition, the restoration of grizzly bears could result in some limited competition with lynx and wolves for resources and the predation of certain listed salmonids. However, the level of competition is expected to be low based on resource partitioning and spatial separation, and any predation of listed fish is not expected to have population-level effects. Based on this initial analysis, the expectation that any impacts would be insignificant, and for the purposes of section 7, would result in a “may affect, but not likely to adversely affect” finding, this topic was dismissed from full, detailed analysis. Section 7 consultation under the ESA will be completed once a preferred alternative is identified. Appendix A provides a list of the

potentially affected federal and state-listed species and their designations. Appendix B provides a U.S. Forest Service (USFS) biological evaluation for a number of the species considered.

Geology and Soils. Grizzly bear restoration activities are not expected to result in any ground disturbance. Given the anticipated nature, scope, and scale of restoration activities, no impacts on geology or soil resources are anticipated; therefore, this topic was dismissed from further analysis.

Cultural and Historical Resources (excluding Ethnographic Resources). There are no known cultural, historic, or archaeological resources within the NCE that would be disturbed as a result of actions related to grizzly bear restoration. Therefore, these topics were dismissed from further analysis.

Visual Resources. Grizzly bear restoration activities are not expected to affect visual resources. Any visual impacts that may result from the presence of vehicles, equipment, and personnel during the implementation of grizzly bear restoration activities would be analyzed within the context of Recreational Use and Experience and Wilderness. Therefore, this topic was dismissed from further analysis.

Soundscapes. Acoustic monitoring conducted in 2008 in wilderness areas of North Cascades National Park, and again from 2009 to 2011 in both frontcountry and backcountry areas of the park complex, identified a number of sources of human-caused noise within the park complex that affect the ambient soundscape. Human-caused noises in wilderness areas were found to be relatively infrequent, though the natural ambient sound levels in the park are inherently high due to the presence of flowing water and wind. A wide variety of human-caused noise sources are audible in frontcountry areas, and the contribution of human-caused noise to ambient sound levels in frontcountry areas is greater (NPS 2008a; NPS 2013a). Helicopter flights associated with grizzly bear restoration would take place during a total of 5 to 10 days annually. In addition, fixed-wing aircraft at altitudes above 500 feet above ground level would be used during spring and fall to monitor for reproduction and respond to mortalities. The number and duration of flights would vary based on the number of bears being monitored but would likely be limited to a couple of days per year. Noise impacts related to the use of helicopters and fixed-wing aircraft during grizzly bear restoration activities are addressed within the context of the analysis of impacts on wildlife and fish, wilderness, and recreational use and experience. No long-term changes to the soundscape are expected. As a result, this topic was dismissed from further analysis.

Invasive Species. The implementation of grizzly bear restoration activities could have the potential to contribute to the spread of invasive species such as diffuse knapweed (*Centaurea diffusa*) or reed canary grass (*Phalaris arundinacea*) within the NCE. Given the anticipated nature, scope, and scale of restoration activities, it is expected that avoidance of areas with known invasive plant infestations and mitigation measures such as the proper cleaning of vehicles, equipment, uniforms, and footwear would be sufficient to prevent the spread of invasive species. The agencies would locate and use weed-free project staging areas. In addition, they would avoid or minimize all types of travel through weed-infested areas or restrict travel to those periods when spread of seed or propagules are least likely. Based on these conditions, this topic was dismissed from further analysis.

Environmental Justice. Environmental justice is associated with Executive Order 12898, published on February 11, 1994. This executive order requires all federal agencies to incorporate environmental justice into their mission by “identifying and addressing ... disproportionately high and adverse human health or environmental effects of [their] programs, policies and activities on minority and low-income populations in the United States” (Executive Order 12898; 59 FR 7629, 1994).

Census data for communities adjacent to the NCE grizzly bear recovery zone were analyzed to determine whether these communities may qualify as environmental justice populations (minority and/or low-income populations), and whether they would be disproportionately affected by grizzly bear restoration

(U.S. Census Bureau 2013). Census blocks were evaluated in the following counties to determine if environmental justice populations were present: Chelan, Douglas, Grant, King, Kittitas, Okanogan, Skagit, and Snohomish. It was determined that while a small number of communities adjacent to the recovery zone boundary may qualify as minority and/or low-income populations, these communities would not be disproportionately affected by grizzly bear restoration because restoration activities would not be focused in these areas. Therefore, this topic was dismissed from further analysis.

AGENCY COORDINATION

Formal interagency coordination on grizzly bear recovery has been ongoing since formation of the IGBC in 1983. The IGBC was formed to help ensure the recovery of viable grizzly bear populations in the contiguous 48 states through interagency coordination of policy, planning, management, and research. The IGBC consists of representatives from the FWS, NPS, USFS, Bureau of Land Management, U.S. Geological Survey, and the state wildlife agencies of Washington, Idaho, Wyoming, and Montana. The British Columbia Ministry of Environment and Alberta Sustainable Resource Development are also represented (IGBC 2015a).

CEQ regulations regarding the designation of lead agencies state that more than one agency may act as joint lead agencies to prepare an EIS (40 CFR 1501.5). The NPS and FWS are preparing this draft plan/EIS as co-lead agencies. Lead agency designation is based on the magnitude of an agency's involvement; project approval/disapproval authority; expertise concerning environmental effects of the action; duration of agency involvement; and sequence of agency involvement.

CEQ regulations also state that any agency (federal, state, local, or tribal government) that has special expertise with respect to any environmental issue that should be addressed in an EIS may be a cooperating agency upon request of the lead agency (40 CFR 1501.6). USFS lands comprise 74% of the NCE being considered in this plan; therefore, it is participating in this draft plan/EIS process as a formal cooperating agency. The Washington Department of Fish and Wildlife (WDFW) has special expertise with regard to managing wildlife across the state and on USFS lands and is also participating in a formal cooperating agency role for this draft plan/EIS.

Washington State law introduces a unique component to the interagency coordination process. Revised Code of Washington 77.12.035, *Protection of grizzly bears — Limitation on transplantation or introduction — Negotiations with federal and state agencies*, prohibits any agent of the State of Washington from transplanting or introducing grizzly bears into Washington from outside the state:

The commission shall protect grizzly bears and develop management programs on publicly owned lands that will encourage the natural regeneration of grizzly bears in areas with suitable habitat. Grizzly bears shall not be transplanted or introduced into the state. Only grizzly bears that are native to Washington State may be utilized by the department for management programs. The department is directed to fully participate in all discussions and negotiations with federal and state agencies relating to grizzly bear management and shall fully communicate, support, and implement the policies of this section.

While the law prohibits WDFW from reintroducing grizzly bears from outside Washington, it directs the WDFW to fully participate in all discussions and negotiations with federal and state agencies relating to grizzly bear management.

The above state law prohibits WDFW from transplanting or introducing grizzly bears into the state, and the law does not purport to bind federal agencies. Thus, no conflict exists between state law and the ESA.

To the extent that there is any suggestion that the state statute applies to the federal government, the ESA would preempt this state law, pursuant to the Supremacy Clause of the U.S. Constitution (Article VI, Clause 2). In addition, the Property Clause of the U.S. Constitution (Article IV, Section 3, Clause 2, would also act to preempt the state law because grizzly bear reintroduction would occur on federal lands administered by the NPS or the USFS.

Ultimately, the action selected for implementation as a result of this draft plan/EIS will provide the basis for a long-term, interagency approach to restoring grizzly bears within the NCE. This strategy will seek to integrate the separate responsibilities and activities of the FWS, NPS, USFS, and WDFW.

STATUTES, POLICIES, AND PLANS GOVERNING GRIZZLY BEAR RESTORATION

Endangered Species Act of 1973, as Amended. The purposes of the ESA (16 USC 1531 et seq.) “are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved [and] to provide a program for the conservation of such endangered species and threatened species,” among other purposes. It is administered by the FWS and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service. The ESA requires the Secretary of the Interior or the Secretary of Commerce (depending on jurisdiction) to determine whether species are endangered or threatened, and requires all federal agencies to consult with the secretaries on all projects and proposals having potential impacts on federally endangered or threatened plants and animals.

Section 4 of the ESA describes the criteria by which a species may be listed or delisted, describes the endangered species list, and establishes protective regulations for threatened species. A species listed as endangered under the ESA is any species that is in danger of extinction throughout all or a significant portion of its range. A threatened species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. On July 28, 1975, the FWS listed the grizzly bear in the lower 48 states as threatened, in part because the species was reduced to only about 2% of its former range south of Canada.

The determination of whether to list a species as threatened or endangered under the ESA is based on any of the following factors, as outlined in section 4(a)(1) of the act:

- a. the present or threatened destruction, modification, or curtailment of its habitat or range;
- b. overutilization for commercial, recreational, scientific, or educational purposes;
- c. disease or predation;
- d. the inadequacy of existing regulatory mechanisms; or
- e. other natural or manmade factors affecting its continued existence.

Delisting is the removal of a species from the federal lists of endangered and threatened wildlife and plants. To delist a species due to recovery, the FWS must determine that the species is no longer threatened based on an analysis of the five listing factors. This analysis may consider a number of criteria such as population size, recruitment, stability of habitat quality and quantity, and control or elimination of the threats to its continued existence. Recovering species to the point where they can be delisted is the ultimate goal of the ESA (FWS 2004).

The grizzly bear is currently listed as threatened throughout its range. Section 4(d) of the ESA allows for the issuance of special rules for the conservation of threatened species, including limiting the take provisions of section 9 of the ESA (16 USC 1533(d)). Since 1975, four 4(d) rules have governed the take

of grizzly bears, promulgated in 1975, 1985, 1986, and 1992. In 1975 when the grizzly bear was listed, the FWS issued a special rule that applied all of the ESA's take prohibitions except for cases of self-defense or the defense of others, removal of conflict bears, and for scientific research activities not resulting in the death or permanent injury of the animal (40 FR 31734, July 28, 1975). Conflict bears are those bears that demonstrate a non-immediate threat to human safety or commit significant depredation to lawfully present livestock, crops, or beehives. These bears may be taken only if live-capturing and release into suitable habitat would not reasonably eliminate the threat or depredation (50 CFR 17.40(b)). The 1985 and 1986 rules focused on grizzly bear hunting in portions of the NCDE. The allowance of hunting was withdrawn in the 1992 rule. If the NCE grizzly bear population was uplisted to endangered status, the associated 4(d) rules would no longer be in effect because 4(d) rules apply only to threatened species. This means that the take allowances under the 4(d) would no longer be allowed. See additional discussion of "Grizzly Bears in the North Cascades Ecosystem," above.

Section 7 of the ESA provides some of the most valuable and powerful tools to conserve listed species, assist with species recovery, and help protect critical habitat. It mandates all federal agencies to determine how to use their existing authorities to further the purposes of the ESA to recover listed species, to consult with the FWS on proposed actions that have a federal nexus, and to address existing and potential conservation issues (FWS/NMFS 1998). Consultation is required for any threatened or endangered species that could be affected by an agency's action. However, consultation is not required for designated 10(j) nonessential experimental populations, except where species are found in national parks and national wildlife refuges.

Section 9 of the ESA describes prohibited acts under the law. For endangered species, along with other prohibited acts, it is unlawful to take any endangered species (16 USC 1538(a)). The term "take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1532(19)). However, section 10(a)(1)(A) of the ESA provides exceptions to the take provisions. Under section 10, the FWS may permit acts that purposefully take listed species so long as those actions are for scientific purposes or "to enhance the propagation or survival of the affected species." Section 10(a)(1)(B) allows the FWS to permit take that is incidental to, and not the purpose of, the carrying out of otherwise lawful activities (16 USC 1539(a)(1)).

Section 10(j) of the ESA provides for the reintroduction of experimental populations under special regulation. Prior to the addition of section 10(j), the FWS had authority to reintroduce threatened and endangered species into unoccupied historic range, but such efforts were often met with resistance. One reason for public resistance was that the FWS could not assure private landowners, other federal agencies, and state and local governments that a transplanted population would not disrupt future land management options. An experimental population is a group of reintroduced plants or animals that is geographically isolated from other populations of the species and is typically not considered essential to the survival of the species as a whole. Experimental populations are afforded additional regulatory flexibility regarding management of the species. Washington Administrative Code section 232-12-297 provides for the classification of endangered, threatened, and sensitive wildlife species under state law. "Endangered" refers to any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state. The grizzly bear has been listed as endangered in the State of Washington since 1980 (WDFW 2013a). A discussion on classification and protection of endangered, threatened, and sensitive wildlife species under Washington State law is included in appendix C.

U.S. Fish and Wildlife Service Grizzly Bear Recovery Plan (1993). Section 4(f)(1) of the ESA states that the Secretary of the Interior "shall develop and implement plans for the conservation and survival of endangered species and threatened species ... unless he finds that such a plan will not promote the conservation of the species."

The nationwide Grizzly Bear Recovery Plan was finalized in 1982 and updated in 1993. The Grizzly Bear Recovery Plan delineates reasonable actions that are believed to be required to recover and/or protect the grizzly bear. Recovery of the grizzly bear is directed at establishing viable populations in six recovery areas in parts of four states where the grizzly bear was known or believed to exist when it was listed in 1975. The plan outlines a number of criteria specific to each recovery zone by which to gauge grizzly bear recovery, including population size, sex ratio, number of females with cubs, mortality limits, and geographical distribution within the recovery zone (FWS 1993a).

The FWS has assigned the grizzly bear a recovery priority of 9C (FWS 2011a). Recovery priority refers to a number, ranging from a high of 1 to a low of 18, whereby priorities to listed species and recovery tasks are assigned. The criteria on which the recovery priority numbers are based include the following: degree of threat, recovery potential, and taxonomic distinctiveness. Thus, a monotypic genus with a high degree of threat may be assigned a recovery priority of 1, whereas an individual species or subspecies with a low degree of threat might be assigned a recovery priority of 17 or 18. The addition of the letter “C” to a numerical designation indicates the presence of an actual or imminent conflict between the species and development or other economic activities (FWS 2011a). A designation of 9C indicates a species with a high threat and a high recovery potential that is, or may be, in conflict with some form of economic activity (FWS 2011a).

U.S. Fish and Wildlife Service Grizzly Bear Recovery Plan North Cascades Ecosystem Chapter (1997). Specific chapters of the Grizzly Bear Recovery Plan were initially written for four areas, and the evaluation of two other areas, the BE and the NCE, was recommended to determine whether these would also be suitable as recovery zones. Five-year ecosystem evaluations, conducted from 1986 to 1991, were subsequently completed for the BE and NCE, and in December 1991 the IGBC designated both ecosystems as recovery areas (Servheen et al. 1991; Almack et al. 1993). In 1997, a chapter specific to the NCE recovery zone was added to the Grizzly Bear Recovery Plan, as initially recommended by the 1993 recovery plan (FWS 1993a). The priority actions recommended in the NCE chapter are to develop a strategy for implementing the NCE recovery chapter (through reducing human-related direct and indirect mortality, improved sanitation, poaching control, access management, etc.); develop an ongoing educational program to provide information about grizzly bears and grizzly bear recovery to the public; conduct a research and monitoring effort to determine grizzly bear population size and distribution, habitat, and home ranges; and initiate an EIS through the NEPA process to evaluate a range of alternatives for how to recover the population in the NCE (FWS 1997). When the NCE chapter was written, the determination of final recovery goals (e.g., the number of female with young, the percentage of Bear Management Units (BMUs) occupied, and the level of human induced mortality) was not possible because of lack of information for the ecosystem (FWS 1997).

National Park Service *Management Policies 2006*. The NPS *Management Policies 2006* (NPS 2006) provides the NPS with guidance for interpreting and implementing the laws enacted by Congress that govern the management of the national park system. The fundamental basis for these management policies is in the requirements of the 1916 Organic Act, which requires the NPS to preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of present and future generations.

Chapter 4 of the NPS *Management Policies 2006* (NPS 2006), “Natural Resource Management,” provides direction regarding the implementation of NPS activities to further the purposes of the ESA:

The Service manages the natural resources of parks to maintain them in an unimpaired condition for present and future generations in accordance with ... environmental laws such as the ... Endangered Species Act of 1973 ...

The NPS *Management Policies 2006* states that whenever possible, natural processes will be relied upon to maintain native plant and animal species and influence natural fluctuations in populations of these species; however, the NPS may intervene to manage individuals or populations to protect rare, threatened, or endangered species. Section 4.4.2.3 states the following:

The Service will survey for, protect, and strive to recover all species native to national park system units that are listed under the Endangered Species Act. The Service will fully meet its obligations under the NPS Organic Act and the Endangered Species Act to both proactively conserve listed species and prevent detrimental effects on these species.

To meet these obligations, it is NPS policy to cooperate with the FWS to

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

North Cascades National Park Service Complex General Management Plan (1988). The *North Cascades National Park Complex General Management Plan (GMP)* (NPS 1988) describes a program for managing the park to preserve its pristine environments and keep intrusions to a minimum for the benefit of present and future visitors. The plan also recognizes the park's value, as the most protected portion of the greater NCE, for increasingly rare wildlife populations and for scientific inquiry.

Regarding the management of grizzly bears, the 1988 GMP states the following:

The North Cascades are home to several mammals that are federally or state listed as rare or threatened. Of particular concern is the grizzly bear, currently the subject of an interagency effort to determine the viability of recovery in the North Cascades. Recent sightings indicate the grizzly bear is found in small numbers in the North Cascades ecosystem. The park will assist in the interagency effort to determine habitat quality within the ecosystem, by focusing on the habitat with the NPS complex. Recovery efforts, if initiated, will be controversial and require a public awareness program (NPS 1988).

Interagency Memorandum of Understanding (1997). In July, 1997, the USFS and NPS agreed to an interim "no-net-loss-of-core area" policy for grizzly bear habitat on federal lands within the NCE. The agreement stipulated that the NPS and USFS agreed to an interim standard of no net loss of core area until the agreement is superseded by a forest/park plan amendment or revision. Core areas are defined as areas

with the following characteristics: (1) No motorized use of roads and trails during the non-denning period. (2) No roads or trails that receive non-motorized, high-intensity use. (3) A minimum of 0.3 mile (500 meters) from any open road, motorized trail, or high use trail. The term “core area” was created in response to research showing that bears, notably females, avoid proximity to roads when and where possible, and therefore the presence, use and density of roads is a critical issue for management agencies to address (IGBC 1998). For more information on the USFS regulatory requirements see appendix B and appendix C.

Ross Lake National Recreation Area General Management Plan (2012). The *Ross Lake National Recreation Area General Management Plan (GMP)* (NPS 2012c) articulates a vision and management philosophy for guiding decision making in Ross Lake National Recreation Area for 15 to 20 years following its adoption in 2012. This plan formalizes management direction, including access management, with respect to the core grizzly bear area for the entire park complex. On NPS lands, the plan replaces the 1997 Interagency Memorandum of Understanding (MOU) establishing an interim “no-net-loss-of-core area” policy for federal lands within the NCE (NPS/USFS 1997). No new roads were proposed in the Ross Lake GMP. New trails proposed in the Ross Lake GMP would constitute reductions of less than 1% in each of four BMUs, in areas that are not high quality grizzly bear habitat. A BMU, generally, is a defined sub-area of an ecosystem that provides a geographical context within which managers can focus efforts to effectively manage and conserve grizzly bears. The Ross Lake GMP states that the NPS will “strive to minimize, avoid or mitigate impacts on high quality spring and fall grizzly bear habitat.” The intent of the Ross Lake GMP is to retain core area ratios at a level of 70% or higher per BMU. The plan requires a habitat assessment for any proposed development within Ross Lake National Recreation Area, North Cascades National Park, or Lake Chelan National Recreation Area.

In addition to the preceding grizzly bear-related laws, policies and plans, appendix C provides additional discussion of other statutes, policies, and plans that must be considered in the NEPA process, including those that direct and guide management on the Mt. Baker-Snoqualmie and Okanogan-Wenatchee National Forests. Appendix B provides additional support for the USFS’s decision making.