# ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

# BIOLOGICAL OPINION

on the

# Effects of Incorporating Habitat Management Direction for the NCDE Grizzly Bear Population into the Helena, Lewis and Clark, Kootenai, and Lolo National Forest Plans on Grizzly Bears

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Action Agency:

U.S. Forest Service

Helena-Lewis and Clark, Kootenai and Lolo National Forests

Consultation Conducted by:

U.S. Fish and Wildlife Service

Montana Ecological Services Office

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# A. INTRODUCTION

This biological opinion was prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). Section 7 of the Act requires Federal agencies to use their authorities to carry out conservation programs to benefit endangered and threatened species. There is also an explicit requirement for Federal agencies to ensure, in consultation with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, that any action they authorize, fund, or carry out will not be likely to jeopardize the continued existence of a listed species, or destroy or adversely modify designated critical habitat. As a result, Federal agencies have a unique opportunity and obligation to assist recovery implementation by addressing threats that result from their programs and actions.

Section 7(b)(3)(A) of the Act requires that the Secretary issue biological opinions on Federal agency actions that "may affect" listed species or critical habitat. Biological opinions determine if the action proposed by the action agency is likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Section 7(b)(3)(A) of the Act also requires the Secretary to suggest reasonable and prudent alternatives to any action that is found likely to jeopardize the continued existence of listed species or result in an adverse modification of critical habitat, if any has been designated. If the Secretary determines "no jeopardy," then regulations implementing the Act (50 C.F.R. § 402.14) further require the Director to specify "reasonable and prudent measures" and "terms and conditions" necessary or appropriate to minimize the impact of any "incidental take" resulting from the action(s).

This document represents the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) on the effects of amending the Land and Resource Management Plans (Forest Plans) for the Helena, Lewis and Clark, Kootenai and Lolo National Forests with habitat management direction for the Northern Continental Divide Ecosystem (NCDE) grizzly bear (*Ursus arctos horribilis*) population. For ease of discussion throughout this document, the National Forests mentioned above may be collectively referred to as the "Amendment Forests" and the proposed action will be referred to as the "Forest Plan Amendments".

The U.S. Forest Service (USFS) submitted a Biological Assessment for Threatened, Endangered, and Proposed Species (BA) to the Service documenting that the Forest Plan Amendments are *likely to adversely affect* grizzly bear (*Ursus arctos horribilis*). Further, the BA determined that the Forest Plan Amendments *may affect, but are not likely to adversely affect* Canada lynx (*Lynx canadensis*), designated Canada lynx critical habitat, bull trout (*Salvelinus confluentus*), or designated bull trout critical habitat. The BA also indicated that the proposed action will have *no effect* on yellow-billed cuckoo (Coccyzus americanus), Kootenai River white sturgeon (*Acipenser transmontanus*), water howellia (*Howellia aquatilis*), or Spalding's Campion (*Silene spaldingii*), and *may affect, but is not likely to jeopardize* wolverine (*Gulo gulo luscus*) (Table 1).

**Table 1. Summary of the U.S. Forest Service determinations of effect of the proposed forest plan amendments on federally listed species**

| Species | Determination of effect |
|---|---|
| Grizzly bear (*Ursus arctos horribilis*) | May affect, likely to adversely affect |
| Canada lynx (*Lynx canadensis*) | May affect, not likely to adversely affect |
| Canada lynx critical habitat | May affect, not likely to adversely affect |
| Bull trout (*Salvelinus confluentus*) | May affect, not likely to adversely affect |
| Bull trout critical habitat | May affect, not likely to adversely affect |
| North American wolverine (*Gulo gulo luscus*) | May affect, not likely to jeopardize |
| Kootenai River white sturgeon (*Acipencer transmontanus*) | No effect |
| Yellow-billed cuckoo (*Coccyzus americanus*) | No effect |
| Spalding's campion (*Silene spaldingii*) | No effect |
| Water howellia (*Howellia aquatilis*) | No effect |

The Final BA and cover letter requesting formal consultation under section 7 of the Endangered Species Act (ESA) was received by the Service on March 13, 2017. As described in this BO, and based on the BA, and other information collected during the consultation process, the Service has concluded that the Forest Plan Amendments, as proposed, are not likely to jeopardize the continued existence of grizzly bears.

This BO does not provide an analysis for effects of specific actions. Rather, the effects analysis is a broad-scale examination of the types of projects and activities that may be conducted under the Forest Plan Amendments that could potentially occur in listed species habitat and result in effects on listed species. The USFS retains the responsibility under the ESA to consult on future projects (conducted under the newly amended forest plans) that may affect listed species regardless of the project's consistency with the proposed action considered in this BO. Future projects and their potential to affect a listed species, or critical habitat, will be analyzed at the project level in a site-specific consultation.

This BO is based on information provided in the BA (USFS 2017) for the proposed action, the related draft Environmental Impact Statement (EIS) (USFS 2016), additional information received during consultation, personal communications with researchers and experts, scientific literature, unpublished reports, field investigations, and other sources of information cited herein.

## 1. Species in the Action Area

As described in the Introduction, seven listed species can be found within the project area: grizzly bear, Canada lynx, bull trout, Kootenai River white sturgeon, yellow-billed cuckoo, Spalding's campion and water howellia. Additionally, one proposed species (wolverine) can also be found in the project area. The distribution of these species is summarized below for each National Forest (Table 2). Species other than grizzly bear will not be discussed further in this biological opinion, but a complete description of each species' distribution within each National Forest is available in the BA (USFS 2017).

**Table 2. Federally designated species on the Amendment Forests.**

| Species (listed entity) | Listing status | Helena National Forest | Lewis and Clark National Forest | Kootenai National Forest | Lolo National Forest |
|---|---|---|---|---|---|
| Grizzly bear *Ursus arctos horribilis* | Threatened | West of I-15 | Rocky Mountain Division | √ | √ |
| Canada lynx *Lynx canadensis* | Threatened; Critical Habitat | Resident west of I-15; Transient east of I-15 | Resident on Rocky Mountain Div.; Transient on Jefferson Div. | √ | √ |
| Lynx critical habitat | Critical Habitat | West of I-15 | Rocky Mountain Division | √ | √ |
| Wolverine *Gulo gulo luscus* | Proposed | √ | √ | √ | √ |
| Yellow-billed cuckoo, *Coccyzus americanus* | Threatened | - | - | - | √ |
| Kootenai River white sturgeon *Acipenser transmontanus* | Endangered | - | - | √ | - |
| Bull trout *Salvelinus confluentus* | Threatened; Critical Habitat | West of I-15 | - | √ | √ |
| Spalding's campion *Silene spaldingii* | Threatened | - | - | √ | √ |
| Water howellia *Howellia aquatilis* | Threatened | - | - | - | √ |

**Endangered** - Any species that is in danger of extinction throughout all or a significant portion of its range.
**Threatened** - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
**Proposed** - Once a species is proposed, a year-long review period commences at the end of which the Service will make a final listing determination. ESA regulation 50 C.F.R. 402.10(a) states: "Each Federal Agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed." Conferencing is not required for anything less than a jeopardy call, but conferencing or concurrence may be requested by the action agency.
**Critical Habitat** - The specific area (i) within the geographic area occupied by a listed species, at the time it is listed, on which are found those physical or biological features (I) essential to conserve the species and (ii) that may require special management considerations or protection: and (iii) specific areas outside the geographic area occupied by the species at the time it is listed upon determination that such areas are essential to conserve the species.

## B. CONSULTATION HISTORY

The history of ESA section 7 consultation on the proposed action is summarized chronologically in Table 3. A complete project record of this consultation is on file at the Service's Montana Ecological Services Office in Helena, Montana. The consultation summary below includes meetings between the USFS and Service, but some events were attended by other agencies as well. USFS-specific communications between individual staff and the Service are also indicated in the table.

**Table 3. Summary of the consultation between the U.S. Forest Service (USFS) and the USFWS Montana Ecological Services Office (Service) on the Forest Plan Amendments.**

| Date | Event |
|---|---|
| June 3, 2016 | NOI published in Federal Register for revised Flathead National Forest plan alternatives and DEIS; alternatives and DEIS for amendment of Kootenai, Helena, Lewis and Clark, and Lolo Forest Plans to incorporate habitat management direction for the NCDE grizzly bear population. |
| June 20, 2016 | Meeting with USFS wildlife biologists, fisheries biologist, silviculturist, planning team leaders, and the Service consultation team was held to discuss consultation strategy, timelines, roles, and responsibilities. |
| August 2, 2016 | An ESA Section 7 Consultation Agreement was finalized. The document outlined proposed timelines, agency tasks, and staffing assignments. |
| September 23, 2016 | USFS sends draft BAs to the Service including:<br>• A broad description of the action to be consulted on,<br>• A description of the specific area that may be affected by the action,<br>• The current status and habitat use of listed species in the action area, and identification of designated critical habitat within the action area,<br>• Discussion of the methods and scientific information used,<br>• Environmental baseline for each threatened or endangered species and critical habitat. |
| November 30, 2016 | USFS biologists meet with the Service's consultation team to discuss draft BA sections, and to discuss the development of a preferred alternative for the final Forest Plan Amendments. |
| December 8, 2016 | USFS wildlife and fisheries biologists meet with the Service's consultation team to discuss draft BA sections pertaining to bull trout and Canada lynx, critical habitats, water howellia, and proposed (wolverine) and candidate species (meltwater lednian stonefly and whitebark pine). |
| January 25, 2017 | The Service and the USFS meet to discuss proposed actions and their effects. The USFS informs the Service that they will be submitting draft BA sections in mid-February due to need for USFS regional office review. |
| February 21, 2017 | In response to comments on prior drafts, the USFS submits an additional draft BA to the Service for review. This second draft also included section providing analysis of indirect effects of the proposed action, cumulative effects, and the determinations of effects on listed species and designated critical habitat (as specified in the consultation agreement). |
| March 6, 2017 | A conference call was conducted between the USFS and the Service. During the call the USFS updated the Service on new timelines for formal consultation. The USFS agreed to submit final BA to the Service by mid-March, 2017. The Service agrees to discuss draft terms and conditions, conservation measures and reporting requirements in April, 2017. The Service expresses their concern that they may need 90 days (until mid-June) to complete consultation due to ongoing litigation, regional USFS priorities and additional complexities with the Forest Plan Amendments. |

| Date | Event |
|---|---|
| March 13, 2017 | The USFS submits the Biological Assessment for Threatened, Endangered, and Proposed Species: Forest Plan Amendments Incorporating Management Direction for the NCDE Grizzly Bear Population into the Helena, Lewis and Clark, Kootenai, and Lolo Forest Plans. The submission package also contains a cover letter from Chip Weber (Flathead NF Forest Supervisor) officially requesting initiation of formal section 7 consultation.<br><br>The statutory 135-day formal consultation timeline begins{50 CFR 402.14 (e-g)} |
| May 3, 2017 | The USFS submits Amendment Forests BA Errata Sheet to the Service. The errata sheet detailed minor changes in wording to make the proposed action consistent with the draft NCDE Conservation Strategy, and to more accurately describe the distribution of grizzly bears. The errata sheet also replaced an incorrectly cited report. |
| August 3, 2017 | Inter-agency draft BO submitted to the USFS |
| August 29, 2017 | A meeting between the USFS and Service was held to discuss the draft BO and provide an updated timeline on completion of consultation. The agencies agreed that an extended timeline for completion would be necessary due to the complexity of the consultation. |
| September 6, 2017 | The USFS provides comments on the draft BO. Comments and feedback were provided by the USFS Regional Office (Region 1), Helena, Lewis and Clark, Kootenai, and Lolo National Forests. |
| September 22, 2017 | The USFS submits a corrected BA to the Service. |
| September 25, 2017 | The Service submits a final draft BO to the USFS for final review and comment. |
| October 3, 2017 | The USFS completes final review of draft BO, submits comments to the Service. |

## C. DESCRIPTION OF THE PROPOSED ACTION

This section describes the proposed Federal action, including any measures that may avoid, minimize, or mitigate adverse effects to listed species or critical habitat, and the extent of the geographic area affected by the action (i.e., the action area). The term "action" is defined in the implementing regulations for section 7 as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air." (50 CFR 402.02).

This section describes the action area, provides background on developing the Forest Plan Amendments, describes implementation of the amendments and summarizes the key elements of the Forest Plan Amendments providing direction applicable to the primary conservation area, zone 1 (including the Salish and Ninemile demographic connectivity areas, and/or zone2.

**Purpose of the Proposed Action**

In 2013, the Service announced the availability of a draft NCDE Grizzly Bear Conservation Strategy for public review and comment (USFWS 2013c). When finalized, the Conservation Strategy will become the post-delisting management strategy for the NCDE grizzly bear population and its habitat. The NCDE Grizzly Bear Conservation Strategy contains habitat-related management direction that pertains to the portions of the Flathead, Helena-Lewis and Clark, Kootenai, and Lolo National Forests that are located within the NCDE. It should be noted that the Helena National Forest and Lewis and Clark National Forest have recently been administratively combined but still have separate forest plans in place, each of which are being amended.

Habitat conditions and management on the Flathead, Helena, Lewis and Clark, Kootenai, and Lolo National Forests have contributed to the increased population size and improved status of the grizzly bear across the NCDE. Supporting a healthy, recovered grizzly bear population in the NCDE will depend on continued, effective management of the grizzly bear habitat. By incorporating consistent direction for management of grizzly bear habitat into the Forest Plans, the USFS will be able to demonstrate to the Service that adequate regulatory mechanisms are in place to support a delisted grizzly bear population.

The purpose of the proposed action evaluated in this BO is to amend four Forest Plans—the Helena, Lewis and Clark, Kootenai, and Lolo National Forest Plans—to incorporate the desired conditions, standards, guidelines, and monitoring items relevant to management of NFS lands and that will support the recovery of the NCDE population of grizzly bears.

**Programmatic Nature of the Proposed Action**

The proposed action to amend the four Forest Plans is programmatic in scope. A Forest Plan identifies general land use purposes or suitability, future conditions that are desirable, goals and objectives for resource conditions on specific lands, and standards and guidelines that establish a management framework for all activities conducted and allowed on NFS lands. In accordance with the National Forest Management Act of 1976, resource plans and permits, contracts, and other instruments for the use and occupancy of NFS lands must be consistent with the Forest Plan. Thus, the effects of a Forest Plan are indirect, by providing long-range guidance for future site-specific actions. Site-specific proposals that implement the Forest Plan are subject to their own analyses, including National Environmental Policy Act planning and decision-making procedures, and ESA section 7 consultation if appropriate. The management direction contained in the proposed amendments will go into effect once the final records of decision are signed by the three Forest Supervisors (Helena and Lewis and Clark National Forests have been administratively combined). Project-level site specific environmental analysis will still need to be completed for proposals that would implement the direction in the forest plan.

The NCDE grizzly bear recovery zone encompasses approximately 5.7 million acres. Each of the four National Forests in the NCDE (Flathead, Kootenai, Helena-Lewis and Clark, and Lolo) is managed in accordance with its own independent Forest Plan, which includes direction for management of grizzly bear habitat. The Helena and Lewis and Clark National Forests have recently combined into the Helena-Lewis and Clark National Forest. However, at this time the Forests continues to be managed under two separate Forest Plans. The NCDE Conservation Strategy uses an approach that provides differential protections in areas depending on their relative importance to grizzly bears (USFWS 2013c). Under the NCDE Conservation Strategy, the following management zones and areas are designated:

- Primary Conservation Area (PCA): The PCA is the same area as the NCDE Recovery Zone, and will be managed as a source area where the objective is continual occupancy by grizzly bears. Habitat conditions in the PCA will be maintained in a manner that is compatible with a stable to increasing grizzly bear population.

- Management Zone 1 (zone 1): The objective in zone 1 is continual occupancy by grizzly bears, but at lower densities than inside the PCA. Protections in zone 1 will focus on managing motorized routes and implementing food/attractant storage orders.

- Demographic Connectivity Areas (DCA): Within zone 1, two DCAs will be established (Salish and Ninemile). These areas will be established to allow the NCDE to serve as a "source" population to other ecosystems (i.e., Cabinet-Yaak and Bitterroot). Protections in the DCAs will support female occupancy and dispersal by limiting miles of open roads, managing current roadless areas, and implementing food/attractant storage orders.

- Management Zone 2 (zone 2): National Forest System (NFS) lands in zone 2 will be managed to provide the opportunity for grizzly bear dispersal, particularly males, to other ecosystems. The protections in zone 2 will center on conflict prevention and response.

As with the PCA, zone 1 and the DCAs, a food/attractant storage order would be implemented on NFS lands within zone 2.

- Management Zone 3 (zone 3): Zone 3 is primarily comprised of areas that do not contain suitable habitat for long-term survival and/or occupancy of grizzly bears. Management in zone 3 will focus on conflict response.

**Forest Plan Amendments**

Key management direction for grizzly bear habitat from the NCDE Conservation Strategy will be incorporated into forest plan components (i.e., desired conditions, standards, guidelines, monitoring) of the four Forest Plans. A detailed list of the amended desired conditions, standards, guidelines, and monitoring items is presented in Appendix 2, and a side-by-side comparison of proposed components and existing components is presented in Appendix 3. The effects of these components will be discussed further in this BO. Following are some key features of the proposed amendments:

1. Within the PCA, there will be no net increase in open motorized route density (OMRD) or total motorized route density (TMRD), and no net decrease in secure core. Temporary changes could occur (see below), but baseline levels would be maintained in each grizzly bear subunit. The definition of "baseline" for the Forest Plan amendments is consistent with the definition in the draft NCDE Grizzly Bear Conservation Strategy (see glossary and standard NCDE-STD-AR-02 for details).

2. In the DCAs, habitat protections would focus on limiting miles or density of motorized roads/routes open to the public during the non-denning season.

3. Temporary increases in open and total motorized route densities and temporary decreases in secure core would be allowed for projects (see "project" definition in the glossary). However, temporary deviations from baseline conditions will not exceed a five percent increase for OMRD, a three percent increase for TMRD, and a two percent decrease for security core. Temporary deviations will be calculated using a ten-year running average for each bear management subunit (procedures for this calculation are presented in Appendix 2; see NCDE-STD-AR-03 for details).
4. 
5. On NFS lands within the PCA, no temporary use by the public during the non-denning season would be authorized within secure core habitat.

6. On NFS lands within the PCA, high use non-motorized trails would no longer be considered (i.e., treated in the same manner as a gated yearlong road) when calculating secure core habitat. This change was proposed because of the difficulties in determining what constitutes high use, lack of data quantifying the level of use for each trail in the

NCDE, and lack of scientific information demonstrating adverse effects from such trails on grizzly bears.

7. Within modeled grizzly bear denning habitat in the PCA, there would be no net increase in the percentage of area or miles of routes that are designated for motorized over-snow vehicle use on NFS lands during the den emergence time period.

8. Special orders for storage of food/wildlife attractants would be in place across NFS lands in the primary conservation area, zone 1 and zone 2.

9. Within the PCA, developed recreation sites designed and managed for overnight use (e.g., campgrounds, cabin rentals, huts, guest lodges, recreation residences) during the non-denning season would be limited to one increase above the baseline in number or capacity per decade per bear management unit.

10. Vegetation management would be designed to consider grizzly bear habitat and to reduce the risk of grizzly bear-human conflicts within the PCA.

11. Livestock allotments in the PCA would have requirements for no net increase in the number of cattle and sheep allotments and no net increase in sheep animal unit months (AUMs). Livestock allotments would be managed to limit the risk of grizzly bear-human conflicts in the primary conservation area and zone 1.

12. Mineral and energy development would be managed with consideration of grizzly bear habitat and to reduce the risk of grizzly bear-human conflicts in the primary conservation area and zone 1. New leases for leasable minerals (e.g., oil and gas) in the PCA would be required to have a no surface occupancy stipulation.

13. Forest plan monitoring items would be added.

14. The proposed forest plan amendments are not reconsidering any goals, objectives, land allocations, standards, or guidelines that are unrelated to grizzly bear habitat management.

# D. STATUS OF THE SPECIES

## 1. ESA Listing History

The Service listed the grizzly bear as a threatened species in the contiguous United States in 1975 (40 FR 31734-31736, July 28, 1975). The Service identified the following as factors establishing the need to list: (1) present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, sporting, scientific, or educational purposes; and (3) other manmade factors affecting its continued existence. The two primary challenges in

grizzly bear conservation are the reduction of human-caused mortality and the conservation of remaining habitat (USFWS 1993).

The Service subsequently developed the Grizzly Bear Recovery Plan (Recovery Plan) in 1982, which was later revised in 1993 (USFWS 1993). The 1993 revised Recovery Plan delineated grizzly bear recovery zones in 6 mountainous ecosystems in the U.S. The Recovery Plan details recovery objectives and strategies for the grizzly bear recovery zones in the ecosystems where grizzly bear populations still persist. These recovery zones are: the Northern Continental Divide Ecosystem (NCDE), Greater Yellowstone Ecosystem (GYE), Cabinet-Yaak Ecosystem (CYE) and the Selkirk (SE) Ecosystem. The Recovery Plan also includes recovery strategies for the North Cascades Ecosystem (NCE) in Washington, where only a very few grizzly bears are believed to remain, and for the Bitterroot Ecosystem (BE) of Idaho and Montana, where suitable habitat remains, but no grizzly bear occupancy has been documented for more than 50 years.

Since the original listing of the grizzly bear, the Service has completed four, 5-year status reviews (46 FR 14652, February 27, 1981; 52 FR 25523, July 7, 1987; 56 FR 56882, November 6, 1991; and September 6, 2011). The Service has undertaken a number of other actions to review the status of individual grizzly bear populations. Between 1986 and 2007, the Service received and reviewed 10 petitions requesting a change in status for individual grizzly bear populations (51 FR 16363, May 2, 1986; 55 FR 32103, August 7, 1990; 56 FR 33892, July 24, 1991; 57 FR 14372, April 20, 1992; 58 FR 8250, February 12, 1993; 58 FR 38552, July 19, 1993; 58 FR 43856, August 18, 1993; 58 FR 43857, August 18, 1993; 59 FR 46611, September 9, 1994; 64 FR 26725, May 17, 1999; 72 FR 14866, March 29, 2007; 72 FR 14866, March 29, 2007). Through this process, we determined the Cabinet-Yaak Ecosystem (CYE), Selkirk Ecosystem (SE), and North Cascades Ecosystem (NCE) warrant endangered status. These uplistings remained warranted but precluded by higher priority listing actions until 2014 (63 FR 30453, June 4, 1998; 64 FR 57534, October 25, 1999; 66 FR 54808, October 30, 2001; 67 FR 40657, June 13, 2002; 69 FR 24876, May 4, 2004; 70 FR 24870, May 11, 2005; 71 FR 53756, September 12, 2006; 72 FR 69034, December 6, 2007; 73 FR 75176, December 10, 2008; 74 FR 57804, November 9, 2009; 75 FR 69222, November 10, 2010; 76 FR 66370 October 26, 2011; 78 FR 70104 November 22, 2013). As of 2014, the NCE remains warranted but precluded while the CYE and SE populations are no longer warranted (79 FR 72450 December 5, 2014). However, the determinations for the CYE and SE were recently vacated. The Service previously determined that grizzly bears in the CYE warranted a change to endangered status, but were precluded from uplisting. However, for several years this population's status has been improving and the Service determined in 2014 that the CYE population no longer warranted endangered status. This determination was recently vacated on August 22, 2017 and the matter is currently remanded to the Service for further consideration. The regulatory environment for grizzly bears had not changed between the time the bear was considered warranted for endangered status but precluded, no longer warranted endangered, and now a matter remanded to the Service. In other words, no management controls were relaxed in 2014.

In 2007, the Service determined that the GYE supported a grizzly bear population with sufficient numbers and distribution of reproductive individuals so as to provide a high likelihood that the species will continue to exist and be well distributed throughout its range for the foreseeable future. Therefore, based on the best scientific and commercial information available, the Service delisted the Yellowstone grizzly bear DPS, effective April 30, 2007. However, on September 21, 2009, a court order vacated the final rule designating the Yellowstone DPS and removing the Yellowstone grizzly bear DPS from the list of threatened species and remanded the rule back to the Service. In accordance with the court order, in March of 2010, the Yellowstone grizzly population was once again listed as a threatened population under the Endangered Species Act (75 FR 14496, March 26, 2010).

The best available scientific and commercial data continue to indicate that the GYE population of grizzly bears has recovered and no longer meets the definition of an endangered or threatened species under the Act. Therefore, on March 11, 2016, the Service proposed to identify the GYE grizzly bear population as a distinct population segment (DPS) and to remove the DPS from the list of endangered and threatened wildlife (81 FR 13173). On June 30, 2017, the Service published a final rule removing the GYE grizzly bears from the list of endangered and threatened wildlife (82 FR 30502). The final rule became effective on July 31, 2017.

### 2. Species Description, Life History, and Population Dynamics

Species information for the grizzly bear is presented in detail in the updated 1993 Grizzly Bear Recovery Plan (USFWS 1993), below is a summary of this information:

Grizzly bears are large and long-lived mammals. Male grizzly bears are usually larger than females (400-600 lbs for males and 250-350 lbs for females), and individuals in the wild typically live between 15 and 25 years (Blanchard 1987). Grizzly bears are omnivorous, opportunistic feeders that have large caloric requirements. This is particularly true in later summer and fall when bears need to build fat reserves that will be utilized during the denning period. Grizzly bears are generally solitary animals, with the exception of the mating season when male and female bears tolerate one another, and a female with cubs. Grizzly bears do not defend territories, but instead have home ranges they share with other grizzly bears, although social systems influence movements and interactions among resident bears. Home range sizes for adult female grizzlies vary from 50 to 150 square miles; an adult male can have a home range size as large as 600 square miles (Servheen 1983).

Grizzly bears in the contiguous United States spend 5 to 6 months in their dens, typically beginning in October or November (Craighead and Craighead 1972). During this period, they do not eat, drink, urinate, or defecate. Over the course of the denning season, grizzly bears hibernate and may lose 30 percent of body weight. All of this weight is stored as fat, which is acquired during the 2 to 4 months prior to entering dens. During the pre-denning period, bears increase their food intake dramatically and may gain as much as 3.64 pounds per day (Craighead and Mitchell 1982).

Mating occurs from May through July, and cubs are born inside the den in late January or early February. Cubs remain with their mother for 2 to 3 years (Schwartz et al. 2003). The age at which females produce their first litter varies from 3 to 8 years, with litter size varying from one to four cubs. Grizzly bears have one of the lowest reproductive rates among terrestrial mammals. Grizzly bear females cease breeding successfully some time in their mid to late 20s (Ibid.).

### 3. Habitat Requirements

Grizzly bears are opportunistic omnivores and will eat berries, grasses, leaves, insects, roots, carrion, small mammals, fish, fungi, nuts, and ungulates. Grizzly bears are selective in their seasonal use of various kinds of forage and, therefore, move across the landscape as they follow the growth and abundance of preferred forage items (Mace et al. 1996; McLellan et al. 1999; Kasworm et al. 2010).

Grizzly bears are habitat generalists. Basic habitat requirements include the availability of food and water, security (from humans and other bears), and den sites (Mace et al. 1996; Mace et al. 1999; Linnell et al. 2000) (Table 4). While biologists agree that preferred habitats of grizzly bears include avalanche chute and early seral, fire-successional type forests, the proximity of hiding cover is also an important variable that has been shown to influence the use of foraging habitat. Given equal foraging opportunities, under cover and in the open, bears prefer to feed under cover.

**Table 4. Grizzly bear key habitat requirements (USFWS 2011b).**

| Habitat Requirement | Key Habitats |
|---|---|
| Spring foraging[1] | Low-elevation mesic vegetation |
| Summer, autumn foraging[1] | Moderate- to high-elevation mesic vegetation |
| Security cover and isolation from humans[2,3] | Cover provided by vegetation and topographic breaks; absence or low density of roads and trails |
| Denning habitat[4] | Remote, high-elevation areas with slopes greater than 30 degrees; friable, deep soils; and snow accumulations |

[1] Mace et al. (1996); Mace et al. (1999); McLellan and Hovey (2001); Nielsen et al. (2002); Waller and Mace (1997).
[2] Archibald et al. (1987); Kasworm and Manley (1990); Mace et al. (1996); Mace et al. (1999); Mattson et al. (1987); McLellan and Shackleton (1988, 1989); Wielgus et al. (2002).
[3] Mace and Waller (1997); White et al. (1999); Graves et al. (2003).
[4] Pearson (1975); Servheen (1981); Zager and Jonkel (1983); Podruzny et al. (2002).

As mentioned, grizzly bears will typically move across the landscape in search of their preferred forage items. As a result, the productivity of grizzly bear populations is likely more strongly influenced by the availability of high quality food resources than by density-dependent regulating factors (IGBC 1987). It has also been observed that grizzly bears of all ages will congregate readily at plentiful food sources and form a social hierarchy unique to that grouping of bears (Hornocker 1962; USFWS 1993).

With the exception of a few forest vegetation types, such as horsetail associations, the majority of vegetative food items preferred by grizzly bears occur in early seral communities where forest cover is absent or relatively sparse (Servheen 1983). Foraging areas that are consistently described in the literature as favored by bears include avalanche chutes (Mace et al. 1996; Waller and Mace 1997; Ramcharita 2000; McLellan and Hovey 2001), fire-mediated shrub fields (McLellan and Hovey 2001), and riparian areas (Servheen 1983; McLellan and Hovey 2001; Kasworm et al. 2010). Avalanche chutes may be used at any time of year, but seem to attract bears particularly in the spring. These areas are typically moist (due to deep snows that melt later than in other areas), and they contain both valuable forage species and sufficient vegetation that provides visual screening. Fire-mediated shrub fields often contain soft-mast producing shrub species (e.g., berries), an important food source for foraging bears in mid-summer and early fall. Riparian areas are primarily used in spring and early summer when habitats at higher elevations are still covered with snow or plant growth is otherwise delayed. Riparian areas provide a variety of key forbs and grasses, and a complex tree and shrub structure offering hiding cover. When bears emerge from their dens in the spring, their fat stores have been severely depleted. At this point, foraging to rebuild energy reserves is their primary focus. It is important that bears have adequate spring foraging opportunities close to their dens, especially when cubs have been born, to build up fat stores quickly.

Food habits not only vary between seasons but also between the recovery zones. Radio collared grizzly bears in the Cabinet Mountains and Yaak River (in the CYE) made greatest annual use of closed timber, timbered shrub fields, mixed shrub snow chutes, mixed shrub/cutting units, alder shrub fields, huckleberry shrub fields, and graminoid and beargrass side-hill parks (Kasworm et al. 2010). In the GYE, grizzly bears have been documented of feed on more than 260 species of plants and animals (Gunther et al. 1991a; Gunther et al. 2014). Due to the challenge of monitoring such a diverse diet, four food sources with relatively high energetic values are monitored because of the relative ease in measuring their abundance. Ungulates (primarily elk and bison) serve as an important food source in early spring (winter killed) before most vegetation is available, early summer (during the calving period), and throughout the year from usurped wolf kills (Green et al. 1997; Mattson 1997; Ballard et al. 2003; Fortin et al. 2013; Gunther et al. 2014). Although the availability of cutthroat trout has declined since the early 2000s, spawning cutthroat trout (*Oncorhynchus clarki*) are a source of nutrition for grizzly bears in the Yellowstone population in the early summer when available (Mattson et al. 1991a; Felicetti et al. 2004; Fortin et al. 2013). These grizzly bears will then feed on army cutworm moths (*Euxoa auxiliaris*) during the late summer and fall as they try to acquire sufficient fat levels for winter hibernation (Mattson et al. 1991b; French et al. 1994). Further, in some years, whitebark pine (*Pinus albicaulis*) seeds may serve as an important fall food due to its high-fat, energy-rich content (USFWS 2011b).

In the NCDE grizzly bears eat roots/corms/bulbs and other vegetation in the early summer months before berries become available (Aune and Kasworm 1989; McLellan and Hovey 1995). Grizzly bears on the eastern front of the Northern Rockies and in Glacier National Park also feed on concentrations of lady bird beetles and army cutworm moths (Mattson et al. 1991b). Once berries become available, NCDE grizzly bears consume a wide variety of available species.

McLellan and Hovey (1995) analyzed scat samples and determined that the amount and species of berries varies annually based on their availability. During late summer to fall, grizzly bears in the NCDE continue to eat berries but also consume more meat and roots/bulbs/corms (Aune and Kasworm 1989; McLellan and Hovey 1995). Late summer to fall is also the time when grizzlies make use of whitebark pine nuts when and where they are available (Aune and Kasworm 1989).

In addition to foraging habitat, a degree of isolation from humans and human-associated activities and hiding cover are necessary habitat components for grizzly bears (Mattson et al. 1987; McLellan and Shackleton 1988, 1989; Mace et al. 1996, 1999). Human activities can result in direct mortality of bears, as well as indirect negative effects by displacing bears to less suitable habitats (McLellan et al. 1999; Wakkinen and Kasworm 2004). The most effective way to minimize the risk of adverse interactions between humans and bears is to provide spatial separation between areas of human activity and areas of bear activity. In areas where such separation is not possible, providing large areas of secure habitat that include seasonal habitats may reduce the potential for contact and minimize risk of disturbance and illegal mortality (Mace and Waller 1998).

Managing public motorized access to grizzly bear habitat is one of the most common and effective ways to maintain a level of separation between grizzly bears and humans. This separation provides a number of benefits: (1) minimizes human interaction and reduces potential grizzly bear mortality risk; (2) minimizes displacement from important habitat where energetic requirements can be met with limited disturbance from humans; and (3) minimizes habituation to humans (Mattson et al. 1987; McLellan and Shackleton 1988; McLellan 1989; Mace and Manley 1993; Mace et al. 1996; Wakkinen and Kasworm 1997). Secure habitat for grizzly bears (referred to as security core areas) is specifically defined by the Interagency Grizzly Bear Committee (IGBC) as areas that are at least 0.3 mile from any open road, motorized trail, or high-use non-motorized trail, and that receive no motorized use of roads or trails during the period they are considered secure habitat (IGBC 1998). Such lands should also encompass areas of seasonal importance for grizzly bears throughout the year.

While security cover allows grizzly bears to avoid contact with humans, the cover is sometimes necessary for bears to avoid contact with other bears. Strict territoriality among grizzly bears is not known, and intraspecific defense behavior generally tends to be limited to defense of limited food concentrations, defense of young, and surprise encounters (USFWS 1993). Adult male bears are known to kill juveniles, and adults also occasionally kill other adults. Females with cubs require spatial separation from aggressive males. This is particularly true in spring, when cubs-of-the-year are most prone to attack. Data are insufficient to fully assess the effects of predation on younger bears by adult bears (USFWS 1993), particularly when considering potential indirect effects of various human activities that may displace a subadult bear into the home range of an aggressive adult bear. Females with cubs often select rugged and isolated habitats for this reason (Mace and Waller 1997; Russell et al. 1979). Shrub and tree cover, as well as topographic landscape features, are commonly used as security from humans or other bears (McLellan and Hovey 2001; Wielgus et al. 2002), and dispersing subadult bears may be

forced to choose poor home ranges that may be equally dangerous to their survival (USFWS 1993).

Another key habitat requirement for grizzly bears is the presence of suitable denning habitat. Den site characteristics are variable, but several researchers have described dens located at high elevations in remote areas with slopes greater than 30 degrees, soils that are deep, and aspects where snow accumulates (Craighead and Craighead 1972; Linnel et al. 2000; Mace and Waller 1997; Podruzny et al. 2002). Sloped sites are often selected because they facilitate easier digging and are generally stabilized by trees, boulders, or root systems of herbaceous vegetation. In addition to excavating dens, grizzly bears den in natural caves and hollows under the roots of trees. While individual den sites are rarely reported to be used for more than one winter, numerous researchers have observed that dens rarely occur singly, but are concentrated in areas that apparently possess appropriate environmental conditions (Craighead and Craighead 1972).

### 4. Habitat Fragmentation

Habitat linkage and connectivity are important components of grizzly bear habitat (Servheen et al. 2001; USFWS 1993). As a result, habitat fragmentation is particularly relevant to the survival and recovery of grizzly bears. Grizzly bears require extensive home ranges due to their large size and high metabolic demands. Large expanses of unfragmented habitat are important for feeding, breeding, sheltering, traveling, and other essential behavioral patterns. Historically, as human settlements and developments along roads increased in grizzly bear habitat, grizzly bear habitat (and eventually populations) became fragmented. Fragmentation continues today, as grizzly bears attempting to move within, or even between, recovery zones often encounter high volume roads (e.g., highways, interstates), concentrated human development, and/or altered vegetation that does not provide foods, cover, or security. These conditions can continue to contribute to fragmented grizzly bear habitat and populations, and may even lead to direct mortality if bears conflict with humans. Maintaining suitable linkage (areas providing safe passage across/through less than optimal environments) and connectivity (contiguous preferred habitat or cover) between small, isolated grizzly bear populations can benefit grizzly bears in several ways, including (1) allowing immigrant grizzly bears to bolster a resident population in an area that has been affected by catastrophic events or negative environmental conditions, and (2) preserving genetic diversity by reducing negative effects from inbreeding. Task 37 in the Grizzly Bear Recovery Plan (USFWS 1993) called for the evaluation of linkage potential between grizzly bear recovery zones.

### 5. Dispersal, Movement and Genetic Health

Grizzly bears live at relatively low population densities and are vulnerable to excessive human-caused mortality. As a result, fragmentation of historically contiguous populations into isolated “remnant” populations is a management reality on the current ecological landscape (Forman and Alexander 1996; Proctor et al. 2012; Servheen et al. 2001). However, the extinction risk of isolated populations is reduced even through minimal levels of connectivity (Soulé 1987). At greatest risk of extinction are small isolated populations with less than 100 individuals. Such populations are more susceptible to extinction through demographic processes such as human-

caused mortality, natural mortality, and lower population growth rates as well as environmental processes such as poor food years, climate change, and habitat loss. While the CYE and SE grizzly bear populations contain less than 100 individuals each, they are not entirely isolated from Canadian populations. Small populations benefit greatly from both demographic rescue (i.e., the immigration of female bears) and to a lesser degree genetic rescue (i.e., immigration of male bears). Although reconnection of these isolated populations is challenging (Forman and Alexander 1996; Lindenmayer and Fischer 2006), metapopulation theory directs that connectivity is the best long-term conservation practice to increase the resiliency, redundancy, representation, and overall probability of persistence of remaining grizzly bear populations in the lower 48 States (Boyce 2000).

Proctor et al. (2012) compiled and analyzed all known genetic and movement data for grizzly bears in 10 different study areas. They assessed the current state of genetic fragmentation within and between these study areas and used genetic assignment testing and movement data from radio-collared individuals to compile what is known about current levels of male and female movement. Samples from coastal British Columbia and the Selkirk Mountains south of Canadian Highways 3 and 3A (i.e., the SE) have unique genetic material that is dissimilar to other grizzly bear populations in southern Canada and the northern U.S. In the Selkirk Mountains this difference is most likely due to genetic drift acting on a small isolated population over several generations because of anthropogenic pressures (Proctor et al. 2012).

Although there are differences in heterozygosity values among study areas and recovery zones, there have been no detectable consequences on grizzly bear morphology, physiology, ecology, or biology related to these differences in genetic diversity. This is evidenced by normal litter size, little evidence of disease, an equal sex ratio, and physical characteristics such as body size and weight (Schwartz et al. 2006a, 2006b; Kasworm et al. 2008; USFWS, 2011b). Proctor et al. (2012) determined that these genetic differences are not the result of natural selection in varying environments or indicative of historical conditions. Instead, they are artifacts of human pressures (Ibid.). Grizzly bears face high mortality risk when moving between secure blocks of habitat. This mortality risk and very low population sizes resulting from past range contraction and mortality have resulted in genetic fragmentation. Each of these fragmented populations may possess genetic material missing from other populations. Maintenance of this genetic material is important to the long-term ability of this region's grizzly bears to respond to environmental changes.

Because grizzly bears have low reproductive rates, long generational periods (i.e., 10 years), and are slow to disperse across landscapes, there can be a lag time between population fragmentation and the subsequent genetic change (Proctor et al. 2004). The genetic data collected by Proctor et al. (2012) reflect fragmentation occurring on the landscape in the recent past (i.e., last 30-60 years). The researchers also examined grizzly bear movements between ecosystems that displayed varying levels of genetic separation. Movement data were collected from 1985-2007 and represent a more recent picture of fragmentation than genetic data. In general, males move more frequently and over longer distances than females. This result is expected based on what is known about female home range size and the dispersal process. Females typically establish

smaller home ranges than males, and new female home ranges also overlap with their mother's (Servheen 1983). As a result, females generally disperse over much shorter distances than male grizzly bears (McLellan and Hovey 2001; Proctor et al. 2004). The majority of migrants that moved from one study area to another were males, but small number of females were also observed moving between genetically fragmented populations (Proctor et al. 2012). This is consistent with finding in western Montana and Wyoming. The earliest detections of grizzly bears from the NCDE found in the intervening area between the NCDE and the GYE were male, and males make up most of the known occurrences in this region (Mace and Roberts 2012).

Connectivity must be examined in a genetic (requires males only) and demographic (requires females) framework. While dispersing males can enhance genetic diversity, in-turn reducing genetic fragmentation (Miller and Waits 2003; Proctor et al. 2012), female dispersal into small populations is necessary to enhance growth rate (Proctor et al. 2012). This concept is relevant to grizzly bear recovery in the NCE, SE, and CYE recovery zones, all of which contain small populations that are demographically and genetically isolated to varying degrees.

Increasing genetic and demographic fragmentation across Canada Highway 3 has been documented (Proctor et al. 2012). This fragmentation could lead to a loss of connectivity between U.S. and Canadian grizzly bears. Canada Highway 3 is at least a partial barrier to population connectivity by minimizing female crossings (Ibid.). Maintaining and increasing movements by females (i.e., demographic rescue) from larger populations (e.g. Canada or the NCDE) into the small populations (NCE, SE, and CYE) is critical to the long-term conservation of these populations. Recovery could be accomplished via natural movements or translocating animals.

Another aspect of connectivity Proctor et al. (2012) examined was known habitat use by grizzly bears in intervening habitats between Service-identified recovery zones. This habitat use is relevant to understanding how and where grizzly bears in different ecosystems may be linked in the near future. The researchers found 4 males and 1 female using habitat between the Selkirk and Purcell Mountains in Canada, although there was no evidence indicating any migration between these 2 mountain ranges. Mace and Roberts (2012) documented the distribution of grizzly bears in and adjacent to the NCDE recovery zone based on a compilation of telemetry data, mortality data, and DNA detections. The study found that a small number of both male and female grizzly bears are occupying habitat a substantial distance from the recovery zone boundary, including areas to the south, east and west of the NCDE recovery zone. One female grizzly bear with a cub was found to be regularly using habitat between the NCDE and CYE. Telemetry data on this female indicate that she and her offspring spent most of their summer in the Salish Mountains less than 2 miles east of the edge of the CYE while denning within the boundaries of the NCDE recovery zone (Kasworm et al. 2010). The detection of grizzly bears outside the NCDE recovery zone has been increasing in recent years (Costello et al. 2016). Kasworm et al. (2012) have documented multiple grizzly bears, including females with cubs, in the Tobacco BORZ (Bears Outside Recovery Zone), an area situated between the CYE and NCDE.

## 6. Range-Wide Status

When grizzly bears in the lower 48 States were listed under the ESA in 1975, the vast reduction in range, increase in trail and road construction, increase in recreation, livestock use of NFS lands, unsustainable human-caused mortality, lack of data regarding populations, and isolation were identified as factors affecting their conservation status (40 FR 31734, July 28, 1975). To date, all of these threats have been addressed to varying degrees in different areas.

New information regarding grizzly bear biology, current status, and threats has become available over the years since listing. This research and information has been valuable in addressing the impacts and management of roads, trails, recreation, and livestock management. It has also indicated the need for public information and assistance programs, and attractant storage protocols to limit human-caused mortality of grizzly bears.

Although there are six grizzly bear recovery zones, five are occupied; the BE does not have a grizzly bear population at this time. We have recent population data for the GYE, NCDE, CYE, and SE. The current range and distribution of grizzly bears in the lower 48 States is not a static measure as dispersal is occurring, and the specific distribution has not been quantified systematically across all ecosystems. Grizzly bears now occur both within the formally designated recovery zones and in habitat adjacent to the NCDE, GYE, SE and CYE (Wittinger 2002; USFS 2009; Mace and Roberts 2011, 2012).

Following is a summary of the status of grizzly bears for the five recovery zones not included in the action area, followed by a more detailed discussion for the recovery zones that is included in the action area (NCDE).

### *North Cascade Ecosystem*

The North Cascade Ecosystem (NCE) recovery zone lies in north central Washington and is 9,694 square miles in area. Grizzly bears were historically abundant in the NCE, but numbers have declined substantially in recent decades. Sullivan (1983) compiled 233 reports of grizzly bears in the North Cascades and adjacent British Columbia from the mid-1800s through 1983. The last grizzly bear killed in the North Cascades was in Fisher Creek in 1967 (Sullivan 1983), and the last verified sighting occurred in the Glacier Peak Wilderness during 1996 (North Cascades Grizzly Bear Recovery Team 2004). A grizzly bear habitat evaluation of the North Cascades was conducted from 1986 to 1991 (Almack et al. 1993; Gaines et al. 1994). The evaluation and a Technical Committee Review Team (Servheen et al. 1991) concluded that the ecosystem contained sufficient habitat to maintain and recover a grizzly bear population.

Currently, it is estimated that the NCE supports less than 20 grizzly bears (Almack et al. 1993). The nearest population of grizzly bears is immediately north in Canada with an estimated 25 individuals but populations to the east and west of the Cascades in Canada are considered extirpated (North Cascades Grizzly Bear Recovery Team 2004). The distribution of grizzly bears within the NCE is unknown due to a lack of data (USFWS 2011), and very few credible sightings and reports exist. A recent confirmed sighting in the U.S. occurred in September 2010,

and there have been credible reports in the British Columbia portion of this ecosystem (USFWS 2011).

The National Park Service and the Service are working in cooperation with the U.S. Forest Service, and the Washington State Department of Fish and Wildlife in the development of an EIS process for restoring Grizzly Bears to the North Cascades Ecosystem (NCE). That EIS was released to the public for review on January 12, 2017.

***Selkirk Ecosystem***

The Selkirk Ecosystem (SE) recovery zone lies within northwestern Idaho, northeastern Washington, and southeastern British Columbia. It encompasses 2,201 square miles and is unique in that it is split between Canada (47 percent) and the U.S. (53 percent). The 1993 Recovery Plan defined a portion of the SE within Canada so that it was at least 2,000 square miles in size. This size would promote the Recovery Plan's minimum population goal of 90 grizzly bears in the SE (USFWS 1993). In Canada, land ownership is roughly 65 percent Crown (i.e., public) land and 35 percent private. In the U.S. portion of the SE, land ownership is approximately 80 percent Federal, 15 percent State, and 5 percent private lands. Within the SE, 3 percent (39,976 acres) is designated Wilderness Area. The habitat is contiguous across the border and radio-collared bears are known to move back and forth across the border. Therefore, the grizzly bears north and south of the border are considered one population (USFWS 1993).

The SE grizzly bear population has yet to reach recovery criteria presented in the Recovery Plan (USFWS 1993) for females with cubs. In 2004, Wakkinen and Kasworm (2004) estimated that the SE grizzly bear population was increasing at a rate of 1.8 percent annually. More recently, Proctor et al. (2012) compiled data from multiple sources and conducted DNA-based population surveys to estimate a population size of 83 grizzly bears in the SE. The most recent data indicate that population status is below recovery goals in the SE for number of unduplicated females but meets the criteria for distribution of females with young in bear management subunits (Kasworm et al. 2016a). The human-caused mortality levels for total bears and female bears were in excess of calculated limit during 2010-2015 (Ibid.). After known mortality was subtracted, a minimum of 30 grizzly bears were identified in the SE during 2013-2015 based on captures, genetic information, mortality, and sightings of unique individuals (Kasworm et al. 2016a). The recovery plan established a goal of zero human-caused grizzly bear mortality for the SE. This goal was not met.

***Bitterroot Ecosystem***

The Bitterroot Ecosystem (BE) recovery zone is located in east central Idaho and western Montana, and encompasses 5,785 square miles. Though suitable habitat remains, grizzly bears have been extirpated from the BE. At this time the BE is not considered to be occupied by a population of grizzly bears (USFWS 2011b). The Service released a final environmental impact statement (EIS) and decision notice addressing the impacts of reintroducing grizzly bears into the Bitterroot Ecosystem in east central Idaho (USFWS 2000).

***Cabinet-Yaak Ecosystem***

The Cabinet-Yaak Ecosystem (CYE) recovery zone is 2,609 square miles in size and is located primarily in northwestern Montana with small portions in northern Idaho. The location of the CYE relative to the SE and NCDE (east and west, respectively) makes it essential to long-term survival and recovery of grizzly bears throughout a significant portion of its range in the U.S. Land ownership in the CYE is approximately 90 percent Federal, 5 percent State, and 5 percent private lands. The Kootenai National Forest manages approximately 72 percent of lands within the CYE recovery zone, with the Idaho Panhandle and Lolo National Forests administering the remaining Federal lands within the recovery zone. Approximately 5.6 percent (94,272 acres) of the CYE recovery zone is designated Wilderness. Major private land owners in the recovery zone include Weyerhauser and Stimson Timber Companies. Individual landowners live on various-sized acreage along the major rivers. The relative distribution of grizzly bears across this ownership pattern is unknown, but is believed to be proportionate to land ownership (i.e., approximately 90 percent of the grizzly bear population lives on the 90 percent of public land within this recovery zone). In Canada, the portion of British Columbia directly north of the CYE recovery zone is largely public with the exception of the Moyie and Kootenay River valleys.

The CYE is often described in terms of having two portions. The Cabinet Mountains portion forms the southern half of the CYE and is topographically diverse with steep mountain ranges (up to 8,700 feet) and definable seasonal habitats. The Yaak portion has gentler topography, lower elevations (up to 7,700 feet), and seasonal habitats are not as clearly definable. More research and telemetry work has occurred in the Yaak than the Cabinet Mountains.

After known mortality was subtracted, a minimum of 41 grizzly bears were identified in the Cabinet-Yaak recovery zone during 2013-2015 based on captures, genetic information, mortality, and sightings of unique individuals (Kasworm et al. 2016a). Grizzly bears also occur to the north of the U.S.-Canada border, and interchanges of radio-collared bears across the border have been documented (USFWS 1993). Kaseworm et al. (2016) also concluded that there is a 61 percent probability that the CYE grizzly bear population is increasing, and the rate of that increase was estimated at 1.1 percent from 1983 to 2015.

Kasworm et al. (2017, In Prep) provide additional evidence of an improving baseline. The text, table and figure presented below are provided as presented in Kasworm et al. 2017:

> "The estimated finite rate of increase ($\lambda$) for 1983–2016 using Booter software with the unpaired litter size and birth interval data option was 1.016 (95% C.I. 0.936–1.085, Table 15). Finite rate of change in the population was an annual 1.6% for the period (Caughley 1977). Subadult female survival and adult female survival accounted for most of the uncertainty in $\lambda$, with reproductive rate, yearling survival, cub survival, and age at first parturition contributing much smaller amounts. The sample sizes available to calculate population trend are small and small sample sizes yield wide confidence intervals around any calculated estimate of trend (i.e., $\lambda$). The probability that the population was stable or increasing was 66%.

Sample size concerns limited calculation of point estimates of cumulative annual rate of change until 1998 (Fig. 9). Finite rates of increase calculated for the period 1983–1998 ($\lambda$ = 1.067, finite change = 6.5% annual) suggested an increasing population. Survival rates for adult and subadult females were 0.948 and 0.901 respectively, at that time. Adult and subadult female survival rates declined to 0.926 and 0.740 respectively in 2006 at the lowest point in the cumulative lambda calculations ($\lambda$ = 0.926, finite change = -7.7% annual decline) (Fig. 10). Human-caused mortality has accounted for much of this decline in survival rates and population trend. During 2016, adult female survival and subadult female survival had increased to 0.954 and 0.827 respectively and resulted in an improving population trend estimate since 2006. Improving survival by reducing human-caused mortality is crucial for recovery of this population (Proctor et al 2004)."

Table 15. Booter unpaired method estimated annual survival rates, age at first parturition, reproductive rates, and population trend of native grizzly bears in the Cabinet–Yaak recovery zone, 1983–2015.

| Parameter | Sample size | Estimate (95% CI) | SE | Variance (%)[a] |
|---|---|---|---|---|
| Adult female survival[b] ($S_a$) | 16 / 43.3[c] | 0.954 (0.884–1.0) | 0.032 | 23.5 |
| Subadult female survival[b] ($S_s$) | 18 / 22.4[c] | 0.827 (0.655–0.961) | 0.081 | 62.7 |
| Yearling survival[b] ($S_y$) | 33 / 16.2[c] | 0.884 (0.726–1.0) | 0.076 | 2.4 |
| Cub survival[b] ($S_c$)[d] | 38/38 | 0.632 (0.474–0.790) | 0.079 | 5.2 |
| Age first parturition ($a$) | 11 | 6.5 (6.1–6.8) | 0.200 | 0.7 |
| Maximum age ($w$) | Fixed | 27 | | |
| Unpaired Reproductive rate ($m$)[e] | 13/20/21[f] | 0.378 (0.302–0.492) | 0.048 | 5.4 |
| Unpaired Lambda ($\lambda$) | 5000 bootstrap runs | 1.016 (0.936–1.085) | 0.039 | |

[a] Percent of lambda explained by each parameter
[b]Booter survival calculation which may differ from Kaplan-Meier estimates in Table 13.
[c]individuals / bear-years
[d]Cub survival based on counts of individuals alive and dead
[e]Number of female cubs produced/year/adult female. Sex ratio assumed to be 1:1.
[f]Sample size for individual reproductive adult females / sample size for birth interval / sample size for litter size from Table 15.

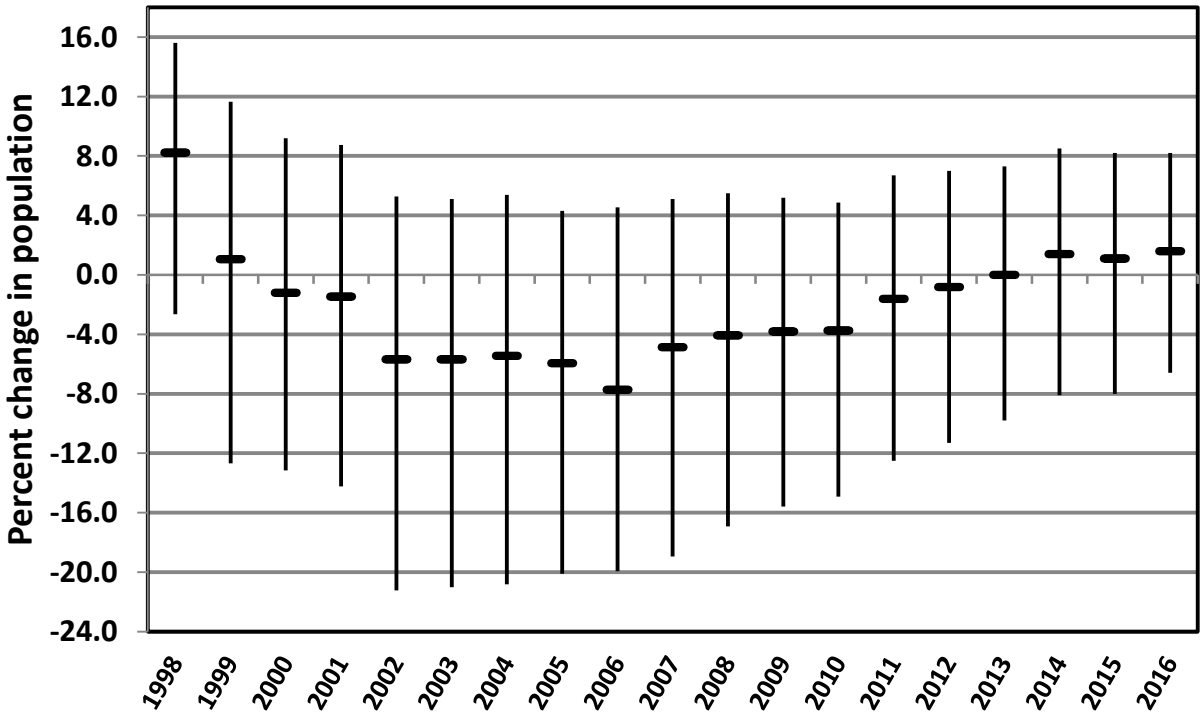


Figure 10. Point estimate and 95% confidence intervals for cumulative annual calculation of population rate of change for native grizzly bears in the Cabinet-Yaak recovery area, 1983–2016. Each entry represents the annual rate of change from 1983 to that date.

> During 2012 the USGS used mark-recapture techniques to estimate the CYGBRZ (generally the CYE) grizzly bear population at 48-50 (Kendall et al. 2016). This was the best recovery area wide population estimate. Using the midpoint of this starting estimate, the calculated rate of increase (1.6%), and the numbers and fates of individuals in the augmentation program (five additions but two mortalities = net gain of three) we estimate the 2016 population at approximately 55 individuals." (Kasworm et al. 2017, In Prep)

The Service determined multiple times – most recently in 1999, that grizzly bears in the CYE warranted a change to endangered status, but were precluded from uplisting (see ESA Listing History, above). However, for several years, this population's status has been improving and the Service determined in 2014 that the CYE population no longer warranted endangered status. This determination was recently vacated by the Court on August 22, 2017 and the matter is currently remanded to the Service for further consideration. The population trend has now changed from 'declining' to 'increasing.' The USFS has established regulatory mechanisms for

motorized access management and attractant storage and researchers have documented some movement between the Cabinet-Yaak and other populations in Canada. These improvements have reduced the threats to the CYE grizzly bear population, but motorized access management has not been fully implemented and more progress is expected (USFS 2015; USFWS 2013).

### *Greater Yellowstone Ecosystem*

The 9,209 square mile Greater Yellowstone Ecosystem (GYE) recovery zone includes portions of Wyoming, Montana, and Idaho; portions of five National Forests (Beaverhead-Deerlodge, Bridger-Teton, Custer-Gallatin, Shoshone, and Targhee NFs); Yellowstone and Grand Teton National Parks; John D. Rockefeller Memorial Parkway; portions of adjacent private and state lands; and lands managed by the Bureau of Land Management. Grizzly bears also frequently occur in and use areas outside of the defined GYE recovery zone.

Population recovery criteria are measured within the 19,279 square mile demographic monitoring area, which includes the recovery zone and all suitable habitat within the GYE. A large proportion of the GYE grizzly bear population occurs within the recovery zone, but grizzly bears also inhabit large areas outside the recovery zone and some areas outside of the demographic monitoring area. Yellowstone and Grand Teton National Parks make up 39.4 percent of the GYE recovery zone. Private holdings and other ownership make up 2.1 percent of the recovery zone and the remaining 58.5 percent occurs on NFS land. National Park Service and NFS lands support roughly 89 percent of the currently known distribution of the grizzly bears in the GYE recovery zone.

Three demographic criteria found in the 1993 Grizzly Bear Recovery Plan (USFWS 1993) have been reevaluated and updated. The second criterion pertaining to the distribution of females with offspring remains unchanged, while the first and third criteria pertaining to the minimum allowable number of females with cubs of the year and sustainable mortality limits have been revised and updated to reflect current methods based on the best available science (USFWS 2017). The current demographic recovery criteria appended to the 1993 Recovery Plan are:

- Demographic Recovery Criterion 1 – Maintain a minimum of population size of 500 grizzly bears and at least 48 females with cubs-of-the-year in the GYE demographic monitoring area, as indicated by methods established in published, peer-reviewed scientific literature and calculated by the Interagency Grizzly Bear Study Team. If the estimate of total population size drops below 500 in any year or below 48 females with cubs-of-the-year in 3 consecutive years, then this criterion will not be met;

- Demographic Recovery Criterion 2 – Sixteen of 18 bear management units (BMUs) within the recovery zone must be occupied by females with young, with no two adjacent bear management units unoccupied, during a 6-year sum of observations. This criterion is important as it ensures that reproductive females occupy the majority of the recovery zone and are not concentrated in one portion of the ecosystem. If less than 16 of 18 bear

management units are occupied by females with young for 3 successive 6-year sums of observations this criterion will not be met;

- Demographic Recovery Criterion 3 – Maintain the population within the DMA around the 2002–2014 model-averaged Chao2 population estimate (average = 674; 95% CI = 600–747; 90% CI = 612–735) by maintaining annual mortality limits for independent females, independent males, and dependent young as per table 2. These adjustable mortality rates were calculated as those necessary to manage the population to the model-averaged Chao2 population estimate of 674 bears which occurred during the time period that the population had a relatively flat population trajectory. If mortality limits are exceeded for any sex/age class for three consecutive years and any annual population estimate falls below 612 (the lower bound of the 90% confidence interval), the IGBST will produce a Biology and Monitoring Review to inform the appropriate management response. If any annual population estimate falls below 600 (the lower bound of the 95% confidence interval), this criterion will not be met and there will be no discretionary mortality, except as necessary for human safety.

The first and third criteria were changed because the Service no longer considers the 1993 recovery plan criteria, as supplemented in 2007, the best scientific method available. The Chao2 estimator is now used to calculate the total number of independent females from unique observations of females with cubs-of-the-year. This then allows calculation of total population size instead of the minimum population size as used in the 1993 method. Additionally, unknown and unreported mortalities can now be calculated, which allows more conservative mortality management based on annually updated information rather than the estimate of unknown and unreported mortality as used in the 1993 recovery plan. Data on the reproductive performance of GYE grizzly bears, survival rates of cub and yearling grizzly bears, the trajectory of the GYE grizzly bear population under alternate survival rates, and the impacts of spatial and environmental heterogeneity on the GYE grizzly bear demographics has been improved and updated.

Using the 2017 revised recovery criteria, it was determined that independent male and dependent young mortalities were under the limits in 2015 (Haroldson and Frey 2016). Independent female mortality exceeded the threshold for 2015. The independent female, independent male, and dependent young mortalities were all under the limits in 2013 and 2014 (Haroldson and Frey 2014, 2015). The criterion states that independent female, independent male, and dependent young mortality cannot be exceeded in 3 consecutive years. Because the threshold for independent female mortality was not exceeded in 2014 and the thresholds for independent male and dependent young mortality were met in each of the last three years the revised demographic recovery criteria are met for independent females, dependent young, and independent males.

The GYE grizzly bear population has increased from estimates as low as 136 individuals when listed in 1975 to approximately 717 animals as of 2015 (Haroldson et al. 2016). This population had been increasing since the mid-1990s and was increasing at 4 to 7 percent per year (USFWS 2007b). A slowing of population growth began in the early 2000s, primarily due to a decline in

survival of dependent-aged bears (van Manen et al. 2016). The population for the recent period has a relatively flat population trajectory (van Manen, in litt.). According to van Manen et al. (2016) this slowing of population growth may be the result of an increase in grizzly bear density (rather than a decline in food resources); possibly indicating the population is near or at carrying capacity. The range of this population also has increased dramatically as evidenced by the increase in occupied habitat since the 1970s. GYE grizzly bears continue to increase their range and distribution annually and grizzly bears in the GYE area now occupy habitats they have been absent from for decades.

In 2007, the Service determined that the GYE supported a grizzly bear population with sufficient numbers and distribution of reproductive individuals so as to provide a high likelihood that the species will continue to exist and be well distributed throughout its range for the foreseeable future. Therefore, based on the best scientific and commercial information available, the Service delisted the Yellowstone grizzly bear DPS, effective April 30, 2007. However, on September 21, 2009, a court order vacated the final rule designating the Yellowstone DPS and removing the Yellowstone grizzly bear DPS from the list of threatened species and remanded the rule back to the Service. In accordance with the court order, in March of 2010, the Yellowstone grizzly population was once again listed as a threatened population under the Endangered Species Act (75 FR 14496, March 26, 2010).

The best available scientific and commercial data continue to indicate that the GYE population of grizzly bears has recovered and no longer meets the definition of an endangered or threatened species under the Act. Therefore, on March 11, 2016, the Service proposed to identify the Greater Yellowstone Ecosystem (GYE) grizzly bear population as a DPS and to remove it from the list of endangered and threatened wildlife (81 FR 13173). The Service has determined that the GYE DPS has increased in size since being listed as threatened and has more than doubled its occupied range. The threats to the population are sufficiently minimized and members of the Yellowstone Ecosystem Subcommittee of the IGBC signed and finalized the 2016 Conservation Strategy for the GYE on December 16, 2016 (USFWS 2016). On June 30, 2017, the Service published a final rule removing the GYE grizzly bears from the list of endangered and threatened wildlife (82 FR 30502). The final rule became effective on July 31, 2017.

### *Northern Continental Divide Ecosystem*

The Northern Continental Divide Ecosystem (NCDE) recovery zone is in north central Montana (8,926 square miles), and is approximately 45 miles from the BE and 15 miles from the CYE. Of the 8,926 square miles within the NCDE recovery zone, 84 percent is on public lands administered by state or federal agencies. The remaining lands are comprised of Tribal, local government, and private ownership. Federally managed land is primarily divided among Glacier National Park and the five National Forests previously discussed in this document. Thirty two percent (2,805 square miles) of all lands inside the NCDE recovery zone are designated Wilderness Areas.

Recently, a draft Grizzly Bear Conservation Strategy was prepared for the NCDE (USFWS 2013c). Five federal agencies (the Service, USFS, National Park Service, U.S. Bureau of Land Management, and U.S. Geological Survey), two Montana State agencies (Montana Fish, Wildlife and Parks and Montana Department of Natural Resources and Conservation), and two tribal entities (the Blackfeet National and Confederated Salish Kootenai) participated in development of the NCDE Grizzly Bear Conservation Strategy. A draft was published in 2013, and the above mentions agencies will be signatories to an agreement to implement the conservation strategy. The expectation is that the signatories will incorporate the set of habitat standards and guidelines relevant to their jurisdiction into their respective management plans. Under the draft NCDE Conservation Strategy, all federal agencies would manage lands within the PCA so that (1) there would be no net decrease in secure core from the baseline and no net increase in open and total motorized route densities; (2) the number and capacity of developed recreation sites would be limited; (3) there would be no net increase in the number of livestock allotments and no net increase in the number of sheep animal unit months from the baseline; (4) vegetation management would be conducted in a way that is compatible with grizzly bear habitat needs; and (5) mineral and energy development would be designed to avoid, minimize, or mitigate adverse impact to grizzly bears. Many of these aspects of the NCDE Conservation Strategy have been discussed above, and will continue to be discussed throughout this document.

The Service is currently evaluating habitat-based recovery criteria for the NCDE. On May 11, 2016, a notice was published in the Federal Register informing scientists and other interested parties that they would have the opportunity to submit oral or written comments on habitat-based recovery criteria for the NCDE grizzly bear population. On July 7, 2016, the Service conducted a workshop to hear oral presentations and also accepted written comments during July 2016. If it is determined that habitat-based recovery criteria are needed for the NCDE population, such criteria may be appended to the Recovery Plan. The draft NCDE Conservation Strategy includes measurable criteria for motorized access and secure habitat, developed recreation sites, and livestock allotments and also for minerals management and vegetation management. The Conservation Strategy also addresses measures to maintain or enhance connectivity between grizzly bear ecosystems and to require proper storage of food and attractants. The forest plan amendments proposed in this action will serve to incorporate these elements. If there are differences between the final NCDE Conservation Strategy and the proposed Forest Plan amendments, the differences would be reviewed and the Forest Plans could be revised or amended once the NCDE Conservation Strategy is finalized and if warranted.

Much like the GYE, the NCDE has experienced population growth over the last four decades. The population size and trend are measured within the 16,640 square mile area comprised of the recovery zone and zone 1, as defined in the draft NCDE Grizzly Bear Conservation Strategy (USFWS 2013c). A 2012 estimate by Mace et al. (2012) concluded that more than 1,000 grizzly bears were present within the NCDE recovery zone and zone 1. Further, Costello et al. (2016) used verified grizzly bear locations to create a current distribution map for the NCDE (see Figure 1-3). This map estimated that grizzly bears occupy an area of about 21,312 square miles, more than double the size of the recovery zone (8,926 square miles). Both males and females are becoming increasingly common along streams and in shrubby draws to the east of the recovery

zone along the Rocky Mountain Front. Three female grizzly bear dens have been documented in short-grass prairie habitat along the eastern front of the Rocky Mountains (Mace and Roberts 2014). Based on its large population size, increasing trend, and genetic diversity, the NCDE appears to be capable of serving as a source population for other grizzly bear populations in the contiguous United States (USFWS 2013c). Demographic connectivity may be especially important to support grizzly bear population in the CYE, which might not otherwise be viable over the long term due to its small size. The NCDE population also has the potential to be a source population for recolonization of the BE.

Because the action area for this consultation is the NCDE, the section titled *Status of the Species within the Action Area* (see below) will provide additional details pertaining to current status of grizzly bear population and habitat within the NCDE.

## 7. Factors Affecting the Status of NCDE Grizzly Bears

The following section summarizes factors affecting grizzly bears in the NCDE. Given that the action area for the Forest Plan Amendments is the NCDE, more details regarding these factors will be discussed in the *Environmental Baseline* section of this biological opinion.

### *Access Management*

Secure habitat is important to the survival and reproductive success of grizzly bears, especially adult females (Mattson et al. 1987; IGBC 1994). Grizzly bear habitat security is primarily achieved by managing motorized access, which results in four favorable outcomes for grizzly bears:

1) minimizes human interaction and reduces potential grizzly bear mortality risk;

2) minimizes displacement from important habitats;

3) minimizes habituation to humans; and

4) provides habitat where energetic requirements can be met with limited disturbance from humans.

Research has demonstrated that roads and associated human activities impact grizzly bears by displacing them from important habitats and lowering their survival rates during the non-denning season (Mace and Waller 1996; Mattson et al. 1987; McLellan and Shackleton 1989; Waller and Mace 1997). Mace and Manley (1993) also showed that grizzly bears adjusted their habitat use patterns in response to both total and open road densities, as well as the traffic levels on roads. In response, the Interagency Grizzly Bear Committee appointed an Access Task Force to develop guidelines for the management of motorized routes in grizzly bear habitat. The guidelines, originally published in 1994 and updated in 1998, recommended three parameters to include as components of access management: OMRD, TMRD, and security core habitat. In effect, these recommendations endorsed the basic premise of managing open and total route densities and

security core during the non-denning season as an effective strategy to support recovery of grizzly bears (IGBC 1998).

Research findings from the Swan Mountain Range of the Flathead National Forest have been used to evaluate the effects of motorized route density on grizzly bears in the NCDE since 1995. Mace et al. (1996) converted a linear road map to a total road density map using a 1 $km^2$ (0.39 $mi^2$) moving window analysis and reported the following relationships to road density:

1. Road density was lower within the composite of the multiannual home ranges of 14 adult and subadult female grizzly bears (0.6 $km/km^2$ or 0.95 $mi/mi^2$) than was road density outside the composite home range (1.1 $km/km^2$ or 1.7 $mi/mi^2$);

2. As total road density increased, probability of selection by grizzly bears declined;

3. 56 percent of the composite female home range was un-roaded compared to 30 percent outside the composite home range;

4. Within seasonal ranges, grizzly bears were more likely to use areas with higher road densities during spring than during other seasons;

5. Selection for habitats within a 0.3 mi buffer around roads decreased as traffic volume increased.

The status of access management on NFS lands administered by the four Amendment Forests is discussed in detail in the *Environmental Baseline* section of this opinion.

### *Conflict with Humans*

Conflicts with humans remains a key issue in grizzly bear recovery within the NCDE. Attractant related grizzly bear deaths (i.e., management removals) are among the leading causes of grizzly bear mortality in the NCDE (USFWS 2010). Cities and towns are common in low elevations and major valley bottoms within and adjacent to the NCDE recovery zone/PCA. Human generated food sources such as bird feeders, garbage, pet and livestock foods, human foods, gardens, and orchards present attractants for grizzly bears. Grizzly bears attracted to these human-generated food sources may become food conditioned. These individuals often become a threat to human safety and property, and are killed illegally or removed through agency nuisance grizzly bear control actions. Data collected between 2000 and 2010 demonstrate management removal related to human food and stock, which involves habituation of bears to human foods and garbage and livestock, resulted in approximately 32 percent of total grizzly bear mortality within the NCDE recovery zone (USFWS 2010). Illegal and malicious killing of grizzly bears is the second leading cause of death at approximately 17 percent.

Natural climatic variations or catastrophic events can impact grizzly bear habitat in a manner that leads to increase human conflict. Wildfires, drought, and late spring freezes can affect available food, including berry crops, and cover over the short-term, particularly to individual grizzly bears. For example, in the NCDE during 1998, 2004, and 2015 significant huckleberry crop

failures at mid to high elevations likely led to an increase in conflicts with grizzly bears (Manley 2005). During a typical year, only a fraction of the grizzly bear population would use natural food sources at low elevations while huckleberries are available at higher elevations. With the lack of huckleberries at higher elevations, a larger number of grizzly bears used low elevation habitats in search for late summer and fall foods, putting many more bears into close proximity to private lands and associated attractants. The number of conflicts and grizzly bear management removals from private and public lands rose dramatically above average.

A food storage order is in effect throughout NFS lands within the NCDE recovery zone/PCA, and in some cases these orders are forest-wide. Further, a food storage order is also in effects in Glacier National Park. These agencies have been fairly successful in managing attractants on federal lands under the current NCDE food storage order. In addition, Montana's Department of Fish, Wildlife and Parks' (MFWP) bear specialist program is expected to continue to work with the public to reduce risks to grizzly bears on private and public lands. In cooperation with other agencies, this program has made notable strides toward an informed public and reduced the availability of attractants to grizzly bears on private and public lands. MFWP measures taken to reduce mistaken identity kills of grizzly bears include mandatory black bear and grizzly bear identification training for all black bear hunters. While human-caused grizzly bear mortalities related to attractants and other sources cannot be eliminated, both total and female human-caused mortality are below the sustainable mortality levels as set in the Recovery Plan.

***Habitat Fragmentation***

Grizzly bears are large animals with high metabolic demands. This requires extensive home ranges, which can encompass from 50 to more than 100 square miles in the NCDE. Large expanses of unfragmented habitat are important for feeding, breeding, sheltering, traveling, and other essential behaviors. Grizzly bears occur at low densities, have low reproductive rates, exhibit individualistic behavior and are largely dependent on riparian habitats also used extensively by people; thus grizzly bear populations are susceptible to human influences. Grizzly bears may avoid key habitats due to human generated disturbances, or become habituated and/or food conditioned, which may ultimately lead to mortality. Historically, as human settlements and developments along roads increased in grizzly bear habitat, grizzly bear populations became fragmented. This phenomenon continues today. As fragmented population segments become smaller and/or isolated, they are more vulnerable to extinction, especially when human-caused mortality pressures continue. Linkage zones are rather recent concepts in broad management direction for grizzly bears and other large-ranging species (Servheen and Sandstrom 1993). Linkage zones, or zones of habitat connectivity within or between populations of animals, foster the genetic and demographic health of the species and a number of efforts to identify and conserve linkage areas are underway.

The NCDE recovery zone/PCA, at 8,926 square miles, encompasses multiple National Forests, Glacier National Park, and is contiguous with grizzly bear habitat in Canada, including Banff National Park. Large blocks of continuous wilderness or core areas occur, providing high levels of connectivity. Road densities on multiple use lands outside of core areas are being managed at levels based on grizzly bear research. A mix of National Forest, private and state lands,

corporate timber lands, and highways occur along the North and Middle Forks of the Flathead River and along the Swan River. These areas typically have higher road densities, human settlements and other associated activity. Such factors represent risks for grizzly bears attempting to reside in or move through the area. However, no evidence exists that suggests a substantial lack of connectivity for grizzly bears across these valley bottoms. To the east of the recovery zone/PCA is prairie, to the west, southwest, and south are other grizzly bear recovery zones (CYE, BE, and GYE). However, grizzly bears are living in these areas and females are raising offspring; observations are documented each year.

### 8. Climate Change

Over the past 50 years the average temperature in the U.S. has risen more than 2 degrees Fahrenheit. Precipitation has increased an average of five percent, extreme weather events (e.g., drought, floods, extreme heat) have become more frequent and intense, and sea level has risen along most of the U.S. coast (Karl et al. 2009). Additionally, cold-season storm tracks are shifting northward and Arctic sea ice is declining.

Ecosystem processes are affected by climate and by the concentration of carbon dioxide in the atmosphere (Janetos et al. 2008). Biodiversity within ecosystems is itself an important resource that maintains the ability of these systems to function. Many factors affect biodiversity including: climatic conditions, influences of competitors, predators, parasites, and diseases disturbances such as fire; and other physical factors. A rapidly changing climate, in conjunction with other stressors, is exerting major influences on natural environments and biodiversity, and these influences are generally expected to continue into the future.

Climate trends in the Pacific Northwest will be important to NCDE grizzly bears with respect to how these trends affect denning behavior, foraging habitat availability, and fire-regimes. Predicted decreases in snowpack levels may shorten the denning season as foods are available later in the fall and earlier in the spring. Spring and fall encounters between grizzly bears and people may therefore increase, escalating the mortality risk to bears during these times. An additional effect of climate change could be changes in the availability of and distribution of foraging areas due to increasing temperatures and seasonal changes in precipitation. The extent and rate to which plant species and communities would be affected is difficult to predict. Changes in vegetative distributions may also influence other mammal distributions, including prey species like ungulates.

Grizzly bears are habitat generalists and opportunistic omnivores, able to find resources in a wide variety of habitat conditions. It is difficult to predict how this large, wide-ranging species would respond to environmental changes associated with climate change. At this time, the scope and scale of such changes are unknown, and the effects (positive or negative) on grizzly bears would likely be variable across the landscape. If climate change affects the status of the NCDE grizzly bear population such that we have new information relevant to our effect analysis below, reinitiation of the consultation may be necessary.

### 9. Analysis of Species Likely to be Affected

The proposed Forest Plan Amendments will provide the framework under which NFS lands administered by the Helena, Lewis and Clark, Kootenai, and Lolo National Forests will be managed to support the recovery of the NCDE grizzly bear population. This BO considers the effects of implementation of the Forest Plan Amendments, as well as the effects of Forest Plan Amendments specific to the conservation of grizzly bears and grizzly bear habitat.

## E. ENVIRONMENTAL BASELINE

This section assesses the effects of past and ongoing human and natural factors that have led to the current status of the species, its habitat and ecosystem in the action area. Environmental baseline is defined as "…the past and present impacts of all Federal, State, or private actions and other human activities in an action area, the anticipated impacts of all proposed Federal projects in an action area that have already undergone formal or early Section 7 consultation, and the impact of State or private actions that are contemporaneous with the consultation in process." (50 CFR 402.02)

### 1. Description of the Action Area

The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). In delineating the action area, we evaluated the farthest reaching physical, chemical, and biotic effects of the action on the environment.

**Table 5. Acres and percentage of NFS land included within the NCDE recovery zone/primary conservation area (PCA), zone 1 within and outside of the demographic connectivity areas (DCAs), zone 2 and zone 3.**

| National Forest | Recovery zone/PCA acres (percent) | Zone 1 within DCA acres (percent) | Zone 1 outside DCA acres (percent) | Zone 2 acres (percent) | Zone 3 acres (percent) |
|---|---|---|---|---|---|
| Flathead | 2,136,536 (37%) | 95,840 (2%) | 135,708 (3%) | - | - |
| Helena | 183,758 (3%) | - | 149,207 (3%) | 642,786 (14%) | 5,792 (< 1%) |
| Lewis & Clark | 777,963 (14%) | - | 6 (< 1%) | 2 (< 1%) | 972,612 (8%) |
| Kootenai | 118,770 (2%) | 276,822 (6%) | 6,480 (< 1%) | - | - |
| Lolo | 268,390 (5%) | 231,072 (5%) | 155,202 (3%) | 38 (< 1%) | - |

The proposed action involves an action area that is larger than the NCDE recovery zone. The action area includes NFS lands within the PCA (which is the same area as the NCDE recovery zone), as well as zone 1, including the Salish and Ninemile DCAs, zone 2, and zone 3 (see Figure 1-1 in Appendix 1 for complete delineations of these zones). The acreages within each National Forest of the recovery zone/PCA, zone 1 (both within and outside the DCAs), zone 2 and zone 3, are shown in Table 5. The Flathead National Forest is included in this section to provide a complete description of NFS lands associated with the NCDE Conservation Strategy. However, the Flathead National Forest is undergoing concurrent formal section 7 consultation on revision of its Forest Plan, which will include key management direction for grizzly bear habitat. As such, it will not be included in this analysis.

## 2. Factors Affecting the Species in the Action Area

Because the action area covered in this BO is the entirety of the NCDE recovery zone, as well as management areas outside the PCA (i.e., DCAs, zones 1-3), this section will cover similar material to what was discussed in the *Status of the Species* section. In that section, the Service determined that the primary factors affecting the NCDE grizzly bear population within the recovery zone include access management, conflict with humans, and habitat fragmentation. Below, we summarize the status of human-caused habitat loss, habitat fragmentation and mortality, as well as habitat conservation within the action area.

### *Food and Attractant Storage*

Improperly stored food and attractants remains a significant threat to NCDE grizzly bears. In addition to human food, attractants can include garbage, livestock feed, carcasses, and pet food. Improperly storing these items can result in the habituation of grizzly bears to human presence and/or conditioning grizzly bears to seek out human foods and attractants. Food-conditioned grizzly bears can learn to enter unsecured garbage containers, sheds, and other buildings in search of a food. The accessibility of attractants often leads to the mortality of a food-conditioned grizzly bear by management agencies or, in more dire circumstances, by private citizens defending their life or property. Grizzly bear are particularly susceptible to anthropogenic food sources during years of poor natural food production such as a berry crop failure. Measures that make attractants such as food, garbage, and livestock carcasses inaccessible through proper storage or disposal are very effective in reducing grizzly bear-human conflicts and the potential for injuries or mortalities.

In the Swan Mountains, the majority of grizzly bear-human conflicts and bear deaths were reported to have occurred on private lands in rural roaded areas (Mace et al. 1996). These conflicts often involved bears that were food-conditioned or habituated to human presence. Nearly 60 percent of management removals resulted from conflicts caused by unsecured food, garbage, pet and livestock foods, carcasses, orchard fruits, vegetable gardens, etc., that attracted bears into the proximity of humans.

On NFS lands, efforts to keep human food, garbage, and other attractants unavailable to bears are ongoing. This is primarily done through the issuance of food storage orders aimed at preventing grizzly bear–human conflicts. The first food storage order was issued in 1998 and included the entire Bob Marshall Wilderness Complex. Subsequent orders have been implemented on a number of National Forests, and have periodically been supplemented or updated as more needs arise. One notable update has been an increase in the spatial extent of food storage orders in recent years as the NCDE grizzly bear population expands outside the original NCDE recovery zone (i.e., PCA). A forest-wide food/wildlife attractant storage special order was issued by the Lolo National Forest in 2011. The Kootenai National Forest also implemented a forest-wide food storage and sanitation special order in 2011 that covered lands within both the NCDE and Cabinet-Yaak recovery zones (USFS 2011b). The Helena and Lewis and Clark National Forests have also issued food/attractant storage orders in 2005 and 2010 respectively, and special orders in effect on the Flathead National Forest were issued in 2010 and 2011 (USFS 2010, 2011).

Other federal agencies also use their authorities to provide for proper storage of food and attractants. Within Glacier National Park, the National Park Service has implemented food storage regulations (pursuant to 36 CFR 2.10 (d)) prohibiting anyone from leaving food unattended or stored improperly where it could attract or otherwise be available to wildlife. The Service administers the National Bison Range complex. National Wildlife Refuges within this complex are day-use only with no overnight camping allowed, and users are expected to pack out their trash as there are no garbage receptacles available anywhere on the refuges. On BLM lands occupied by grizzly bears, food storage guidelines are incorporated into their contracts.

***Motorized Routes***

A large body of research exists demonstrating that the presence of roads and associated human activities has detrimental impacts to grizzly bears. These impacts are largely due to increase potential for conflict, and displacement from important habitats resulting in lowered survival rates during the non-denning season. The effect of motorized routes on NCDE grizzly bears was discussed in section D. 7 (*Factors Affecting the Status of NCDE Grizzly Bears*) of this document.

Recent research conducted on grizzly bears in Alberta, British Columbia assessed the impact of linear road density on grizzly bears. This differs from the moving windows analysis endorsed by the IGBC described previously. Boulanger and Stenhouse (2014) found strong spatial gradients in grizzly bear population trends based upon road density. Further, the authors identified threshold values for road densities associated with desired grizzly bear population outcomes. A summary of the threshold values is presented in Table 6 below.

The road density thresholds derived by Boulanger and Stenhouse (2014) further illustrate the effects that motorized routes, and access management by extension, can have on grizzly bears in the action area. This new research is being applied in the proposed action to prescribe linear road density limits within zone 1 of the action area, which includes the Salish and Ninemile demographic connectivity areas (DCAs, and zone 1of the action area.).

**Table 6. Grizzly bear population objectives and associated road density thresholds derived by Boulanger and Stenhouse (2014). The right-hand column presents how these thresholds were used in developing the proposed action.**

| Objective described in the Alberta study | Reported density km/km2 | Converted to English units | Where applied as a standard in the NCDE grizzly bear amendment |
|---|---|---|---|
| Grizzly bear presence – Distribution of collared bears shows most bears occurred within road densities of 1.5 km/km$^2$ or less (p. 10) | 1.5 km/km$^2$ | 2.4 mi/mi$^2$ | Used to evaluate the ability to provide for bear movement on the Helena NF (zone 1 and zone 2 west of Interstate 15). Density calculation included roads and trails open for motorized use in the non-denning season on NFS lands. |
| Occupancy by females – Adult females occupied habitat with road densities of 1.25 km/km$^2$ or less. If lower survival rate of females with dependent young is considered, the threshold of road density that can be tolerated is reduced (p. 15) | 1.25 km/km$^2$ | 2.0 mi/mi$^2$ | Used to evaluate the ability of the Salish and Ninemile demographic connectivity areas to support female occupancy. Density calculation included both roads and trails open for motorized use in the non-denning season on NFS lands. |
| Grizzly bear mortality risk-<br>Most grizzly bear mortalities occurred at road densities greater than 1.0 km/km$^2$, except for adult males where mortalities occurred across all road densities (p.10) | 1.0 km/km$^2$ | 1.6 mi/mi$^2$ | Used to evaluate grizzly bear mortality risk in the Salish and Ninemile demographic connectivity areas. Density calculation included both roads and trails open for public motorized use in the non-denning season on NFS lands. |
| Alberta core conservation area – Allows for survival rates of females with dependent offspring high enough to ensure an increasing population (p. 18) | 0.75 km/km$^2$ | 1.2 mi/mi$^2$ | N/A<br>[moving window analysis method is used in the primary conservation area] |

### *Over-Snow Vehicles*

The effects of winter activities (e.g., snowmobiling) on denning grizzly bears are not well studied, but there is no evidence to indicate that current levels of snowmobile use are inhibiting the recovery of the grizzly bear population in the NCDE. As described in the BA, an assessment of 252 known grizzly bear dens in the NCDE was conducted in 2014. These dens were assessed with respect to areas open to over-snow use or closed to over-snow use, and no apparent avoidance by grizzly bears of areas open to over-snow use was found. In a review of the limited information available on black, brown (grizzly), and polar bears, Linnell and others (2000) reported that bears readily den within 0.6–1.2 mi of human activity (roads, habitations, industrial activity) and appear to be undisturbed by most activity that occurs further than 0.6 miles from the den site. Further, litter abandonment by female grizzly bears due to snowmobiling activity has not been documented in the lower 48 states (Hegg et al. 2010), nor have adverse effects on bears from snowmobiles been substantiated (Mace and Waller 1997a).

As discussed in the Service's 2008 biological opinion on Amendment 24 to the Flathead National Forest (USFWS 2008), den abandonment has been documented in association with industrial activity and direct approach (Reynolds et al. 1986; Harding and Nagy 1980; Jonkel 1980; Craighead and Craighead 1972). Harding and Nagy (1980) found that one grizzly bear abandoned its den after having the den driven over by a seismic vehicle. Other events with

seemingly similar levels of disturbance have not led to den abandonment (Jonkel 1980; Reynolds et al. 1986; Mace and Waller 1997; Linnell et al. 2000). We are not aware of any primary-source reports in the literature of grizzly bear den abandonment directly attributed to snowmobile activity (USFWS 2008). Nor has other substantive adverse effects on bears from snowmobile use been substantiated (see discussion in USFWS 2008). Mace and Waller (1997) reported no abandonment of dens by grizzly bear even though snowmobiles were often seen within 2 km of den sites. Likewise, the Interagency Grizzly Bear Study Team has intensively researched grizzly bear ecology in the GYE from the 1970's to present, but this research has never documented den abandonment attributed to snowmobiles.

In our 2008 biological opinion (USFWS 2008), we concluded that disturbance from snowmobiles may be most consequential shortly before or after den emergence of a female with cubs. Females and their cubs remain in the den site area for several weeks after emergence from dens (Haroldsen et al. 2002; Mace and Waller 1997). Females with cubs have high energetic needs, and cubs have limited mobility for several weeks after leaving the den. Disturbance levels that cause a female to prematurely leave the den in spring, or move from the den area, could ultimately impair the fitness of the female. Further, if the cubs attempt to follow, they will likely experience decreased fitness as well, as the family group may be pushed to less suitable habitat. To date, we are unaware of any documentation of snowmobile-related impacts on post-den emergent females with cubs, although detection of such events may go unreported. However, the Service's 2008 conclusion remains the same: "In the judgment of the Service, snowmobile-related impacts on post-den emergence females with cubs are more likely to impart serious consequences than any potential impacts to denning grizzly bears."

As described previously, Mace and Roberts (2014) reported that 72 females on the west side of the Continental Divide emerged in the spring between the third week of March and the fourth week of May, with most occurring during the second week of April. Peak den emergence in early April was also found on east side of the Continental Divide, in the Swan Mountains and Mission and Rattlesnake Mountains (Aune and Kasworm 1989, Mace and Waller 1997a, Servheen and Klaver 1983). Given the average den emergence period throughout the NCDE, there is potential for late-season (after March 31) over-snow vehicle use to affect grizzly bears.

***Non-Motorized Trails***

Several studies have investigated the behavioral response of bears to non-motorized trails (Jope 1985; Kasworm and Manley 1990; Mace and Waller 1996). These studies vary considerably in study design, trail use levels, grizzly bear sample sizes, and conclusions as to the impacts of non-motorized trails on bears. In Glacier National Park, bears more than 500 feet away from trails generally did not respond to hikers by fleeing (Jope 1985), and in 45 percent of all cases bears showed no movement in response to hikers. Hiker group size did not significantly affect initial bear behavior, and the relationship between group size and subsequent behavior was similarly weak. The higher presence of bear bells among larger groups may have influenced bear response.

McLellan and Shackleton (1989) reported that bears showed a stronger response to people on foot than in motor vehicles in "low human-use" areas. However, less than half of bears showed any response (walked or ran away) to stimulus greater than 250 feet away. McLellan and Shackleton also reported that grizzlies fled further in response to unexpected off-trail foot travel than to motorized use. Similarly, Mace and Waller (1996) reported that bear response to off-trail hikers was greater than that observed for other types of disturbances. Kasworm and Manley (1990) reported that grizzly bears used habitats within 100 meters (328 feet) of trails less than expected but used habitats 100-1,000 meters (3,281 feet) from trails in proportion to their availability.

Grizzly bear response to human disturbance may also differ between seasons or habitats. Jope (1985) noted that grizzly bears were more likely to respond to hikers through flight or charges in spring and early summer than later in the year, possibly due to habituation once human use became more common during the summer season. Kasworm and Manley (1990) found that bears used habitat within 100 meters of trails less than expected in spring and fall. Conversely, Mace and Waller (1996) found that distance to trails and/or lakes with campsites were significant variables only in summer and autumn.

Non-motorized recreation uses (hiking, horseback riding, mountain biking) also affect the risk of grizzly-bear human conflicts (Herrero and Higgins 1999). These conflicts can pose risks to human safety, as well as safety to grizzly bears. Herrero (1985) was one of the first researchers to report on the causes of bear attacks and how to avoid them. Based upon his study of bear attacks in Canadian national parks, Herrero reported that 68 out of 135 grizzly bear incidents in which the party's activity prior to the bear attack was known, hiking was the most common activity. Herrero reported that 75 percent of encounters he classified as "sudden" were known to involve bear mothers, with females and cubs of the year being most dangerous. Sudden encounters are the most likely situation to result in a grizzly bear-inflicted injury (Herrero 1985). Attacks by bears on humans in North America are disproportionately more frequent in national parks, most being the result of sudden encounters between hikers and grizzly bears that react defensively to protect young or a food source (Herrero 1985; MacHutchon 2014). Fortin and others (2016) reported that most defensive attacks result from surprise encounters involving humans hiking off-trail, in the backcountry, and in areas of natural food abundance for grizzly bears.

Quinn and Chernoff (2010) conducted a literature review of the ecological effects of mountain bikes. A database of 33 grizzly bear-bicyclist encounters or confrontations within western North America revealed that in 95 percent (20 of 21) of encounters where the distance apart was estimated, the bear was 165 feet or less away. Schmor (1999) interviewed 41 mountain bikers in the Calgary region who cycled in the Rocky Mountains and concluded that the speed and relative silence of mountain bikes, especially when combined with environmental factors (e.g., dense vegetation, hilly terrain, running water), likely contributed to mountain bikers approaching bears closer than 50 meters (164 feet) before being detected by the bear. These factors make it less likely that an encounter can be avoided. MacHutchon (2014) stated that an alert mountain biker

making sufficient noise and traveling at slow speed (e.g., uphill) would be no more likely to have a sudden encounter with a bear than would a hiker.

In 1998, the Interagency Grizzly Bear Committee assigned a task force to create standard definitions and procedures for managing motorized access in grizzly bear recovery zones. At that time, the task force recommended that the impacts of "high intensity use" non-motorized trails be considered in calculations of "core" habitat (i.e., security core) in the grizzly bear recovery area (IGBC 1998). When this recommendation was made there were no data or literature available to determine what defined a "high intensity use" trail or how high-use trails may relate to grizzly bear population parameters. The task force recommended that trails receiving greater than 20 parties per week for at least one month during the non-denning season be considered "high intensity use" and that an influence zone would be used that was the same as motorized routes (i.e., 500 meter buffer). Figure 1-5 (in Appendix 1) shows the distribution of trails modeled as "high use" trails in the NCDE, the majority of which are located in Glacier National Park.

Because of the subjective method of establishing the threshold value of 20 parties per week, the lack of available data to quantify high-use non-motorized levels, and the lack of published research demonstrating increased grizzly bear mortality risk or population-level impacts associated with high use non-motorized trails, the NCDE conservation strategy team recommended removing consideration of high use non-motorized trails to define core habitat (USFWS 2013c). This new methodology for calculating secure core habitat is one component of the proposed action, and will be discussed in more detail below where environmental baselines are presented by National Forest.

***Developed Recreation Sites***

Developed recreation sites are sites or facilities on federal lands with features that are intended to accommodate public use and recreation. Examples include campgrounds, trailheads, rental cabins, fire lookouts, summer homes, and visitor centers. Developed recreation sites can affect grizzly bears through temporary or permanent habitat loss and displacement. However, the primary concern related to developed recreation sites is that of grizzly bear-human conflicts caused by unsecured bear attractants, habituation, and food conditioning (Knight et al. 1988). Developed recreation sites that support overnight use are considered to have a higher potential for grizzly bear-human conflict (USFWS 2013c). Grizzly bear-human conflicts have occurred at developed recreation sites on NFS lands, although efforts such as food storage orders, bear-resistant containers, and public education have been implemented to help reduce the risk of these instances in the future. The majority of grizzly bears removed or relocated by management agencies in the NCDE had been involved in conflicts related to unsecured attractants, such as garbage, bird feeders, pet/livestock feed, and human food. Although the majority of these grizzly bear mortalities associated with human conflict occur on private lands, developed recreation sites on public lands in the NCDE area remain a concern.

### *Livestock Management*

When the grizzly bear was listed in 1975, the Service identified "livestock use of surrounding national forests" as detrimental to grizzly bears "unless management measures favoring the species are enacted" (40 FR, p. 31734). The primary concern with livestock operations is that they may lead to direct mortality of bears due to control actions resulting from depredation or learned use of bear attractants such as livestock carcasses and feed. Other potential effects include displacement due to livestock-related activity and competition for preferred forage

Predation on smaller animals such as domestic sheep and goats, calves, or chickens have been widely documented (Anderson et al. 2002; Knight and Judd 1983). Grizzly bears frequently coexist with larger livestock such as adult cattle without incident. However, predation on cattle does occur. When these incidents occur, management agencies may try to relocate bears, but often have to remove them from the population. Because of the increased likelihood of grizzly bears conflicts with sheep, the 1986 Interagency Grizzly Bear Guidelines emphasized the desirability of phasing out sheep allotments.

Approximately 7 percent of all human-caused grizzly bear mortalities in the NCDE between 1998 and 2011 were due to management removal actions associated with livestock depredations. In the NCDE, most livestock depredations by grizzly bears occur on sheep but also on young cattle. The majority of these livestock-related grizzly bear mortalities occur east of the Continental Divide, either on private lands or on the Blackfeet Indian Reservation along the Rocky Mountain Front. There have been no livestock-related grizzly bear removals on NFS lands in recent decades.

There are also permitted grazing operations on NFS land for horses and mules in the NCDE. These are typically associated with outfitter and guide operations, or Forest Service administrative use. There is no evidence of conflicts with bears due to depredation, attractants, or forage competition related to horse and mule grazing permits. Honeybees are classified as livestock in Montana (MCA 15-24-921) and hives present a strong attractant to some grizzly bears. On-going efforts to keep grizzly bears away from honeybee operations (e.g., electric fences) have proven effective at minimizing conflict although these conflicts still occur.

### *Vegetation Management*

Grizzly bears in the NCDE occupy a variety of habitat types but generally prefer to forage in areas with hiding cover nearby, particularly when feeding in the daylight hours (Aune and Kasworm 1989; Mace and Waller 1997a). To further illustrate this point, Waller (1992) reported that grizzly bears avoided recently harvested tree stands, as well as stands less than 30–40 years old where newly growing vegetation did not yet provide hiding cover. Nielson et al. (2004) suggested that forest design and silvicultural planning consider strategies such as increased perimeter-to-area ratio and low-impact site preparation to maximize grizzly bear food abundance, while minimizing human access (Nielsen et al. 2004).

Vegetation management (e.g., timber harvest, thinning, fire suppression) on NFS lands may alter the amount and composition of cover and forage in grizzly bear habitat. Some types of

vegetation management may actually serve to increase grizzly bear forage through improved growth of grasses, forbs, and berry-producing shrubs (Zager et al. 1983). However, the roads and human activity associated with these activities can negatively affect grizzly bears by disturbing or temporarily displacing bears while operations are on-going. Further, human activity in grizzly bear habitat results in greater chances of a conflict (Zager et al. 1983).

***Mineral and Energy Development***

Mineral development refers to surface and underground extraction of leasable materials (e.g., oil, coal, hardrock mining), which is regulated by permits on NFS lands. Currently there are no plans to operate any commercial mines on NFS lands within the PCA, except for the Cotter Mine on the Helena National Forest (details below in the *Helena National Forest* subsection). The production of oil and natural gas is conducted through a leasing process. As of 2012, there were 247 oil and gas leases inside the PCA (including public and private lands). At that time, nine leaseholders had submitted applications for permit to drill to the Bureau of Land Management, one of which was located on private lands. Within zone 1, there have been eleven applications for permit to drill submitted, only three of which are on NFS lands. The applications for permit to drill include surface use plans of operation, which require site-specific evaluation and analysis in compliance with National Environmental Policy Act. Mineral and energy development on each of the four Amendment Forests will be detailed in subsequent sections of this BO.

Mineral and energy development may affect grizzly bears by reducing and fragmenting habitat. However, the increased human activity associated with these developments is a greater threat. Increased human presence can result in conflicts with grizzly bears. As with other factors affecting grizzly bears (e.g., developed recreation), situations where more humans and bears co-exist often lead to conflict due to habituation, improper storage of attractants, or even vehicle strikes.

***Habitat Fragmentation***

Linkage zones are rather recent concepts in broad management direction for grizzly bears and other large-ranging species (Servheen and Sandstrom 1993). Linkage zones, or zones of habitat connectivity within or between populations of animals, foster the genetic and demographic health of the species and a number of efforts to identify and conserve linkage areas are underway.

The NCDE recovery zone/PCA, at 8,926 square miles, encompasses multiple National Forests, Glacier National Park, and is contiguous with grizzly bear habitat in Canada, including Banff National Park. Large blocks of continuous wilderness or core areas occur, providing high levels of connectivity. Road densities on multiple use lands outside of core areas are being managed at levels based on grizzly bear research to reduce potential conflicts. A mix of federal, state, private lands, and highways occur along the North and Middle Forks of the Flathead River and along the Swan River. These areas typically have higher road densities, human settlements and other associated activity. Such factors represent risks for grizzly bears attempting to reside in or move through the area. However, no evidence exists that suggests a substantial lack of

connectivity for grizzly bears across these valley bottoms. Grizzly bears are living in these areas and females are raising young; observations are documented each year.

***Climate Change***

Over the past 50 years the average temperature in the U.S. has risen more than 2 degrees Fahrenheit. Precipitation has increased an average of five percent, extreme weather events (e.g., drought, floods, extreme heat) have become more frequent and intense, and sea level has risen along most of the U.S. coast (Karl et al. 2009). Additionally, cold-season storm tracks are shifting northward and Arctic sea ice is declining.

Ecosystem processes are affected by climate and by the concentration of carbon dioxide in the atmosphere (Janetos et al. 2008). Biodiversity within ecosystems is itself an important resource that maintains the ability of these systems to function. Many factors affect biodiversity including: climatic conditions, influences of competitors, predators, parasites, and diseases disturbances such as fire; and other physical factors. A rapidly changing climate, in conjunction with other stressors, is exerting major influences on natural environments and biodiversity, and these influences are generally expected to continue into the future.

Climate trends will be important to NCDE grizzly bears with respect to how these trends affect denning behavior, foraging habitat availability, and fire-regimes. Earlier snowpack melt off may shorten the denning season and make food available later in the fall and earlier in the spring. Spring and fall encounters between grizzly bears and people may therefore increase, escalating the mortality risk to bears during these times. An additional effect of climate change could be changes in the availability of and distribution of foraging areas due to increasing temperatures and seasonal changes in precipitation. The extent and rate to which plant species and communities would be affected is difficult to predict. Changes in vegetative distributions may also influence other mammal distributions, including prey species like ungulates.

Grizzly bears are habitat generalists and opportunistic omnivores, able to find resources in a wide variety of habitat conditions. It is difficult to predict how this large, wide-ranging species would respond to environmental changes associated with climate change. At this time, the scope and scale of such changes are unknown, and the effects (positive or negative) on grizzly bears would likely be variable across the landscape. If climate change affects the status of the NCDE grizzly bear population such that we have new information relevant to our effect analysis below, reinitiation of the consultation may be necessary.

## 3. Status of the Species in the Action Area

This section provides current information on grizzly bear population and habitat dynamics in the action area. Because the action area spans multiple National Forests, the species' status is described first on the scale of the entire NCDE, and then further broken down by individual National Forest.

### *NCDE Population Size and Trend*

Current estimates indicate that the NCDE grizzly bear population is growing and has experienced significant population growth over the last four decades. The population size and trend are measured within the 16,640 square mile area comprised of the recovery zone and Zone 1, as defined in the draft NCDE Grizzly Bear Conservation Strategy (USFWS 2013c). In 2004, a DNA-based mark-recapture study was conducted in a 7.8-million-acre area occupied grizzly bears in and around the NCDE recovery zone. Extrapolating from the 563 individuals detected, the overall grizzly bear population in the NCDE was calculated to be 765 grizzly bears, including all sex and age classes (Kendall et al. 2009). Between 2004 and 2009, Mace et al. (2012) radio-collared and monitored 83 female grizzly bears in the NCDE and calculated that the population was increasing at a rate of 3.06 percent per year (95 percent confidence interval = 0.928-1.102). Further, data from this study indicated that more than 1,000 grizzly bears resided in and adjacent to the NCDE recovery zone and zone 1 in 2012.

More recently, Costello et al. (2016) calculated a slightly lower population growth rate of 2.3 percent for grizzly bears in the NCDE. However, this lower growth rate was thought to be the result of more thorough analytical techniques instead of a decline in the population. The authors stated: "we do not believe the observed difference in the two estimates is a result of actual population change. Our current models included a covariate for trend, and no negative trend was observed in any of the vital rates. Rather, we believe that the differences between Mace et al. (2012) and this report can be attributed to: (1) an increase in sample sizes for estimation of all vital rates; (2) better representation of conflict females in the estimation of vital rates; and (3) subtle but significant differences in methods of analysis."

To maintain a healthy grizzly bear population in the NCDE, it is necessary to have a balance between reproduction and mortality (USFWS 2013b). Grizzly bear mortality and survival in the NCDE affects population growth and is influenced by age, sex, reproductive status, and home range location (e.g., proximity to human developments). The average age of first reproduction in the NCDE is 5.4 years, but can vary from 3-8 years of age (Mace et al. 2012). Mean litter size in the NCDE is about two cubs, can range between one to four cubs (Mace and Waller 1997b; Schwartz et al. 2003). Cubs are born in the den in late January or early February and remain with the female for 1.5 to 2.5 years, making the average time between litters in the NCDE 3.0 years (Mace and Waller 1997; Schwartz et al. 2003).

Teisberg et al. (2015) assessed grizzly bear population health and body condition, finding that adult females across all ecoregions of the NCDE enter dens at mean fat levels above those thought to be critical for cub production. They stated that there is no evidence to conclude that the widely varying food resources across the NCDE are inadequate to meet the needs of reproductively active adult females. As opportunistic omnivores, grizzly bears in all regions of the NCDE exploit diverse combinations of food items to arrive at productive body conditions (Teisberg et al. 2015). Costello et al. (2016) documented a survival rate for adult females (the most important group affecting population trend) of 94.7 percent with a 95 percent confidence interval of 91.9 to 97.2 percent (Costello et al. 2016).

Grizzly bear mortalities can be attributed to variety of causes and fluctuate from year to year. Human-caused mortality is the most significant factor influencing grizzly bear survival in the NCDE. Costello et al. (2016) analyzed human-caused mortality of independent-aged (i.e., greater than 2 years old) grizzly bears from 2004–2014, and found that human-caused death accounted for 71 percent of all grizzly bear mortality in the NCDE. They also determined that the leading cause of human-cause mortality was management removals, followed by poaching/malicious kills, and defense of life. However, when accounting for the fact that non-management removal deaths often go unreported, Costello et al. (2016) estimated that poaching/malicious kills likely accounted for the highest proportion of total independent bear mortality (27 percent), followed by management removals (16 percent), illegal defense of property (11 percent), and natural causes (9 percent).

The majority of management removals result from conflicts at sites associated with frequent or permanent human presence (USFWS 2013c). Unsecured grizzly bear attractants on private lands such as chicken coops, garbage, human foods, pet/livestock foods, bird food, livestock carcasses, wildlife carcasses, barbeque grills, compost piles, orchard fruits, or vegetable gardens are usually the source of these conflicts. Walters and Holling (1990) stated that managing human-caused mortality, monitoring both population and habitat parameters (e.g., road access), and responding when necessary with adaptive management are the best ways to ensure a healthy grizzly population

In each grizzly bear recovery zone, the Recovery Plan established minimum population goals that ensure a population of grizzly bears that is; (1) adequately distributed throughout the zone, (2) reproducing, and (3) can sustain existing levels of human-caused mortality (USFWS 1993). The Recovery Plan identified a minimum NCDE-wide grizzly bear population of 391 bears. The most recent population estimates indicate that this number is exceeded by a large margin, and the NCDE population is continuing to grow.

### *NCDE Population Distribution*

In addition to increases in population size, grizzly bear distribution throughout the NCDE has also increased over the last few decades. To facilitate the assessment of grizzly bear population recovery objectives, the NCDE grizzly bear recovery zone was subdivided into smaller units called Bear Management Units (BMUs). Twenty-three BMUs were delineated in the NCDE (see Figure 1-4 in Appendix 1).

Costello et al. (2016) evaluated occupancy of the 23 BMUs in the NCDE by females with offspring during 2004–2014. Using a 6-year running average, as set forth in the recovery plan (USFWS 1993), they documented full occupancy of the recovery zone/PCA starting in 2009.

The NCDE recovery zone includes approximately 5.7 million acres of land. Using verified grizzly bear locations to create a current distribution map for the NCDE, Costello et al. (2016) estimated that bears currently occupy an area of roughly 13.6 million acres, or about 21,312 square miles, more than double the size of the recovery zone (8,926 square miles).. This current

distribution of grizzly bears encompasses the entire NCDE recovery zone/PCA, nearly all of zone 1, including 100 percent of the Salish demographic connectivity area and 63 percent of the Ninemile demographic connectivity area, and part of zones 2 and 3 (Costello et al. 2016). Both males and females are becoming increasingly common along streams and in shrubby draws to the east of the recovery zone boundary along the Rocky Mountain Front. Three female grizzly bear dens have been documented in short-grass prairie habitat along the eastern front of the Rocky Mountains (Mace and Roberts 2014).

Based on its large population size, increasing trend, and genetic diversity, the NCDE appears to be capable of serving as a source population for other grizzly bear populations in the contiguous United States (USFWS 2013c). Demographic connectivity may be especially important to support the small grizzly bear population in the CYE, which might not otherwise be viable over the long term. The NCDE population also has the potential to be a source population for recolonization of the BE.

The Greater Yellowstone Ecosystem has a robust bear population, but there was a concern that geographic isolation from other populations may lead to a loss of genetic diversity. DNA analysis by Miller and Waits (2003) on museum specimens did show that there was a decline in allelic richness and expected heterozygosity during the early half of the 20th century. However, Kamath et al. (2015) recently reported that genetic diversity of the GYE population has stabilized, with a very low (0.2 percent) rate of inbreeding during the 1985-2010 period. The current genetic diversity of the GYE population is moderately low as compared to other North American and European brown bear populations, due to its isolation (Kamath et al., 2015). Although the results by Kamath et al. (2015) removed the immediate need for translocation of bears into the GYE, the restoration of gene flow is still important, and the expanding NCDE grizzly bear population would make a suitable donor stock.

### 4. Status of Habitat in the Action Area

Grizzly bears use a wide variety of habitats. The varying climate, topography, and vegetative conditions throughout the NCDE result in a mosaic of habitats and foods for grizzly bears to consume during different seasons. During spring and early summer, grizzly bears in the NCDE eat primarily roots, corms, bulbs, and other vegetation (Aune 1994; McLellan and Hovey 1995). Later in the summer, grizzly bears in the NCDE consume a wide variety of berries as they become available (McLellan and Hovey 1995). Summer foraging items also include concentrations of lady bird beetles and army cutworm moths on rocky talus slopes (Aune and Kasworm1989; Mattson et al. 1991; Servheen 1983). During late summer to fall, grizzly bears in the NCDE continue to eat berries but also consume more meat, herbaceous vegetation, and roots (Aune and Kasworm 1989; Mace et al. 1994; McLellan and Hovey 1995).

In the past, grizzly bears were known to feed extensively on whitebark pine nuts in the late summer to fall, particularly in the Whitefish Range and on the Rocky Mountain Front (Aune and Kasworm 1989; Kendall and Arno 1990). However, high infection rates and mortality of whitebark pine caused by white pine blister rust (Kendall and Keane 2001) have dramatically reduced or eliminated this food source. The NCDE grizzly bear population has continued to

increase despite the loss of this food source, indicating that ample alternate food sources remain available to grizzly bears in the NCDE.

As described in the Recovery Plan, grizzly bears are an omnivorous and opportunistic species, with utilized food sources varying annually, seasonally, and even day to day (USFWS 1993). The abundance and distribution of food resources, availability of habitat components such as cover and denning sites, the levels and types of human activities, grizzly bear social dynamics, learned behavior of individual grizzly bears, and annual weather are important variables influencing the accessibility of foods for bears. Because of the complexity and interactions of these variables, there is no known way to deductively calculate the carrying capacity for grizzly bears across a landscape (USFWS 1993). Grizzly bears in the NCDE occupy a variety of habitat types, but generally prefer to forage in areas with some type of hiding cover nearby, particularly in daylight hours (Aune and Kasworm 1989; Waller and Mace 1997). A mosaic of vegetation providing forage and cover is desirable, but the complexity described above makes it difficult to quantify a desired landscape composition.

The NCDE contains large areas of congressionally-designated wilderness, totaling more than 1.7 million acres within the recovery zone/PCA. The Wilderness Act of 1964 precludes road construction, motorized and mechanized uses, permanent human habitation, new livestock allotments, new mining claims, new oil and gas leases, or other developments that would impair the wilderness character of wilderness areas, except for those specifically allowed by the enabling legislation (e.g., Schafer airstrip). Wilderness areas provide a high degree of security for grizzly bears. The NCDE also contains sizable amounts of inventoried roadless areas. These roadless areas, as well as certain other lands that have little or no permanent human presence or road development, are well distributed throughout the NCDE and contribute to secure habitat for grizzly bears.

The Nature Conservancy mapped landscape permeability for the Pacific Northwest (McRae et al. 2016) including western Montana, by classifying areas as having high, moderate or low landscape permeability. Resistance to movement was modeled by considering features such as land use, roads and rail lines, energy infrastructure, and housing development. Overall, the network of federal lands in northwestern Montana was estimated to provide a moderate to high degree of landscape permeability for wildlife, including grizzly bears. The USFS has been cooperating for many years with federal and state agencies and private organizations to improve habitat connectivity and mitigate the impacts of highways, train tracks, and other developments that impede movement by wildlife, including specific efforts for grizzly bears.

Grizzly bears utilize denning habitat in the winter to hibernate. On the west side of the NCDE, 52 separate females monitored during 1987-‘88 to 2012-‘13 denning seasons entered their dens between the first week of October and the fourth week of November, with most occurring the fourth week of October (Mace and Roberts 2014). In the spring, 72 females emerged from their dens between the third week of March and the fourth week of May, with most occurring during the second week of April (Mace and Roberts 2014). On the east side of the NCDE (i.e., Rocky Mountain Front), grizzly bears entered dens between October 10 and December 5, with a median

date of November 7, and emerged in the spring between March 10 and May 13, with a median date of April 7 (Aune 1994; Mace et al. 1994).

Both males and females have a tendency to use the same general area to hibernate year after year, but the same den is rarely reused by an individual (Linnell et al. 2000). Most grizzly bear dens in the NCDE are located at elevations above 6,400 feet (Mace and Waller 1997a), with the average elevation somewhat higher on the Rocky Mountain Front (Aune 1994; Mace et al. 1994). The average elevation of 252 grizzly bear dens in the NCDE ranged from 6,427 to 6,906 feet (USFS 2017). An estimated 47 percent (1,647,863 acres) of NFS land in the PCA provides potential denning habitat; therefore, the availability of denning habitat is not likely to be a limiting factor for grizzly bears in the NCDE (USFWS 2013c).

### 5. Status of the Species by National Forest

#### *Helena National Forest*

The Helena National Forest (HNF) has 981,543 acres of land within the action area (Table 5, Figure 1-1). The HNF contains land within the PCA (about 3 percent of the total), zone 1 (about 3 percent of the total), zone 2 (about 14 percent of the total), and zone 3 (less than 1 percent of the total).

Food storage orders are in place on the Lincoln Ranger District, both for the northern portion that is within the PCA and for the portion of the Blackfoot landscape that is in zone 1 (Figures 1-2 and 1-6). There is no food storage order yet in place for zone 2, but the HNF intends to issue a special order for zone 2 during 2017/2018 and efforts to educate the public about proper storage of food and attractants remains ongoing.

Under the existing HNF Forest Plan (USDA 1986), the Interagency Grizzly Bear Guidelines (IGBC 1986) are applied to the portion of the HNF located within the NCDE recovery zone. Approximately 63 percent of the acres within the recovery zone on the HNF are considered management situation 1, which gives the most stringent protection to grizzly bear habitat, and about 37 percent are management situation 2 (USDA 1986).

Management of grizzly bears outside the recovery zone is also addressed in the existing Forest Plan and provides guidance for identifying grizzly bear habitat that is not currently inventoried. The existing plan also provides guidance for management in areas of known grizzly bear activity (defined as observations in 6 out of the last 10 years, including observations of females with cubs or yearlings in at least 5 of the 10 years).

As discussed in Section C of this biological opinion, the Helena and Lewis and Clark National Forests have recently been administratively combined into the Helena-Lewis and Clark National Forest (HLCNF), but separate forest plans remain in place. The proposed action will amend both of these existing plans, but the USFS has begun the process of creating a revised, unified HLCNF Forest Plan.

Motorized Route Density and Security Core Inside the PCA

The existing HNF Forest Plan does not establish required levels for OMRD, TMRD, or security core on NFS lands in the NCDE recovery area/PCA. In 2006, ESA section 7 consultation was reinitiated to evaluate the effects of continued implementation of the Forest Plan, including motorized access density within the PCA. The Blackfoot non-winter travel plan (USFS 2016a) updated the access management direction for this portion of the HNF. The 2016 BO for the Blackfoot non-winter travel plan superseded the portion of the 2006 BO on grizzly bears related to motorized access within the recovery zone (i.e., the Lincoln Ranger District).

There are three bear management subunits located on the HNF: Alice Creek, Arrastra Mountain and Red Mountain. OMRD (percent of area > 1 mi/mi2), TMRD (percent of area > 2 mi/mi2) and percent security core (existing or after implementation of the Blackfoot non-winter travel plan decision) are presented in Table 7.

**Table 7. Existing conditions for open and total motorized route density and security core in the recovery zone by bear management subunit on the Helena National Forest. *Note*: conditions presented in this table reflect implementation of the Blackfoot non-winter travel plan.**

| Bear Management Subunit | ≥ 75% NFS Lands | OMRD (% of area > 1 mi/mi$^2$) | TMRD (% of area > 2 mi/mi$^2$) | Security Core (% of area) |
|---|---|---|---|---|
| Alice Creek [1] | no | 10 | 18 | 71 |
| Arrastra Mountain [2] | yes | 16 | 17 | 75 |
| Red Mountain [2] | yes | 21 | 21 | 63 |

BMU = bear management unit
OMRD = open motorized route density; TMRD = total motorized route density

[1] Source: 2015 moving window analysis (Ake, 2015b)
[2] Expected levels after implementation of the Blackfoot travel plan, used as a surrogate for incidental take in the 2016 BO

The Alice Creek subunit is less than 75 percent NFS lands. The Alice Creek subunit baseline has been updated to reflect the acquisition in 2006 and 2011 of 6,240 acres from the Nature Conservancy that were previously owned by the Plum Creek Timber Company. The Alice Creek subunit fully meets recommended levels for OMRD (less than 19 percent), TMRD (less than 19 percent) and security core (at least 68 percent).

The existing condition in the Arrastra Mountain subunit currently exceeds the recommended level for TMRD at 21 percent, but will meet the recommended level after full implementation of the Blackfoot travel plan (TMRD will decrease to 17 percent). This is reflected in Table 7 above.

The Red Mountain bear management subunit currently does not meet the recommended levels for OMRD, TMRD or security core. The Blackfoot non-winter travel plan will reduce route density and increase secure core in the Red Mountain subunit as shown in table 6, which will improve conditions for grizzly bears (USFS 2017, 2017b). Existing motorized route densities and security core in the Red Mountain subunit is likely resulting in adverse effects to individual grizzly bears. The adverse effects associated with existing conditions in this subunit were analyzed in the Service's Blackfoot non-winter travel plan BO (USFWS 2016a).

Motorized Route Density in Zones 1, 2 and 3

The current distribution of grizzly bears outside of the PCA includes the area south of Highway 200 and west of I-15 in the Blackfoot and Continental Divide landscapes (Figure 1-2 in Appendix 1). Grizzly bears are known to occur at low density throughout much of this area, which would be managed as zone 1 and zone 2 under the proposed amendment.

The current linear densities of all motorized routes (roads and trails) by management zone on the HNF are presented in Table 8 below. Motorized route densities in some of these areas are likely high enough that they are adversely affecting individual grizzly bears via displacement. However, a comparison to the threshold values identified in Alberta by Boulanger and Stenhouse (2014) would suggest that existing road densities on NFS lands in zone 1, zone 2, and zone 3 on the HNF are compatible with occupancy by female grizzly bears since linear densities are below 2.0 mi/mi$^2$.

Under the 2016 Divide Travel Plan, which covers a portion of zone 2 on the HNF, the function of a number of existing roads will shift (closing some, converting others to motor trails), but no construction of any new permanent roads will be authorized. Overall, the motorized trail system in the Divide Travel Plan area will increase 19 miles to 52 miles. However, roads open to full-sized vehicles will decrease from 415 miles to 271 miles. The result will be a net decrease of 111 miles in motor routes open to vehicle use during the grizzly bear non-denning period.

**Table 8. Linear density of motorized routes (roads and trails) open to the public on HNF outside the PCA.**

| Zone | Density of all motorized routes | Density of NFS routes only |
|---|---|---|
| Zone 1 (233 mi$^2$) | 1.5 mi/mi$^2$ | 1.3 mi/mi$^2$ |
| Zone 2 (1,004 mi$^2$) | 0.9 mi/mi$^2$ | 0.8 mi/mi$^2$ |
| Zone 3 (9 mi$^2$) | 0.1 mi/mi$^2$ | 0 mi/mi$^2$ |

Motorized Over-Snow Use During Den Emergence

The Blackfoot-North Divide winter travel plan, completed in 2013, analyzed a large geographic area of approximately 372,000 acres on the HNF. Of the area analyzed, about 185,000 acres are located within the PCA and provide 63,322 acres of modeled grizzly bear denning habitat (USFS 2009). Approximately 89 percent of the modeled denning habitat is either within the Scapegoat Wilderness or other areas that do not allow motorized over-snow vehicle use. In the areas where motorized over-snow vehicle use is allowed, the season-ending date is March 31, except in the Copper Bowls area where extended use is permitted until May 31 (USFS 2013). By implementing a March 31 closure date, with the exception of the Copper Bowls area, there is little potential for motorized over-snow vehicle use to overlap with den emergence of grizzly bears. In the Copper Bowls play area the amount of modeled denning habitat as well as foraging habitat is limited by the rock slopes at the head of the drainage. There is a potential for adverse impacts to female grizzly bears with cubs in the PCA during the den emergence period, although the area affected is relatively small.

Grizzly bears continue to expand their range south of the PCA. During the winter of 2008/2009, a female grizzly bear fitted with a radio collar by MFWP denned south of Highway 200. This was the first time that a grizzly bear den had been documented on the HNF outside of the PCA. Under the Blackfoot-North Divide winter travel plan decision (USFS 2013), about 70,610 acres of the acres south of Highway 200 (outside the primary conservation area) are open for motorized over-snow vehicle use from Dec. 2 to April 15. However, motorized over-snow vehicle use is generally minimal south of Highway 200 by April due to poor snow conditions and limited access on lower-elevation lands. Therefore, there is a potential for adverse impacts on bears due to late-season over-snow vehicle use in this area, although the likelihood of this occurring is not high.

High Use Non-Motorized Trails Inside the PCA

Non-motorized trails that receive extensive use from the public can affect grizzly bears. Grizzly bears may avoid high use non-motorized trails, or have conflicts with people on non-motorized trails. Several different variables, such as season, habitats and food sources, recreationist group size and behavior, and the predictability of the activity, may influence the degree of disturbance and the risk of grizzly bear-human encounters and conflicts. Sudden encounters between bears and recreationists, particularly activities where the person is moving quickly and/or quietly, have the greatest risk of resulting in injuries or mortalities.

Currently, high use non-motorized trails are included in the calculation of security core habitat. Using this methodology, the Alice Creek, Arrastra Mountain, and Red Mountain subunits contain 70, 74 and 58 percent security core habitat respectively. Under the proposed action, high use non-motorized trails will no longer be included in the calculation to determine secure core habitat percentages in grizzly bear subunits. Table 9 presents the baseline security core habitat calculations, along with the proposed secure core habitat calculation which will no longer incorporate high use, non-motorized trail.

**Table 9. Comparing secure core calculated with and without nonmotorized high intensity use trails (data from 2015 moving window analysis (adopted from USFS 2017a)**

| Bear Management Subunit | Percent security core with high intensity use nonmotorized trails | Percent secure core without high intensity use nonmotorized trails |
|---|---|---|
| Alice Creek | 70 | 71 |
| Arrastra Mountain | 74 | 74 |
| Red Mountain | 58 | 61 |

Developed Recreation Sites

Developed recreation sites are of concern because frequent or prolonged human occupancy may result in increased bear attractants, increasing the risk of habituation, food conditioning, and grizzly bear-human conflicts or mortalities. Under the existing Helena forest plan, a forest-wide standard states that new campgrounds and other developed recreation facilities, such as boat ramps or picnic areas, will generally not be constructed. Existing developed recreation sites will be maintained, but emphasis instead is given to providing dispersed recreation opportunities.

Within the Monture Landers Fork BMU on the HNF, three campgrounds provide a total of 35 campsites. There are no cabins or lodges. There are eight day-use recreation sites and 17 trailheads on NFS lands in this BMU. There is no history of grizzly bear mortalities associated with developed recreation sites on the HNF.

Livestock Allotments

Within the HNF portion of the PCA, there are two active cattle allotments and one active sheep allotment. On the sheep allotment, animals are closely managed and the sheep are never bedded down on NFS lands as they return to private lands at night. No grizzly bear mortalities have occurred as a result of sheep or cattle grazing on the HNF. However, four mortalities and one bear relocation have occurred as a result of livestock depredations that occurred on private land in the Lincoln area. In response, a 2014 consultation between the HNF and the Service determined that livestock allotments within the PCA may be adversely affecting grizzly bears. The potential take associated with existing allotments within the PCA was exempted in the 2014 incidental take statement (USFWS 2014).

In the area south of Highway 200 and west of Interstate Highway 15 where grizzly bears are present, there are two active sheep allotments and 30 cattle allotments (9 in the Upper Blackfoot and 21 in the Divide landscape). There have been no reported grizzly bear mortalities or management actions towards grizzly bears associated with livestock on NFS lands. Off of NFS lands, grizzly bear mortality associated with livestock depredation has occurred in both zone 1 and zone 2.

The existing forest plan direction provides direction applicable to management situations 1 and 2 within the recovery zone to reduce livestock impacts to important grizzly bear habitats and protect food production areas (wet alpine and subalpine meadows, stream bottoms, aspen groves, and other riparian areas) and to manage grizzly bear-livestock conflict situations. In addition, provisions in grazing permits provide for the cancellation, suspension, or temporary cessation of activities if needed to resolve a grizzly bear conflict situation. The food and attractant special order requires bear-resistant storage of all livestock food and the reporting of all livestock carcasses within 24 hours of discovery.

Vegetation Management

Existing HNF Forest Plan standards and guidelines for vegetation management in the PCA encourages a mosaic of successional stages; restricting logging activities in time and space as needed. Current direction dictates that projects maintain or improve grizzly bear habitat quality or quantity where it would not increase the risk of grizzly bear-human conflicts. Further, it requires maintaining cover as needed along grass/forb/shrub openings, riparian wildlife habitat, or wetlands. Existing Forest Plan standards and guidelines are presented in Appendix 3, and will be discussed further in the *Effects of the Action* section of this document.

Mineral and Energy Development

The only commercial mining rights within the HNF portion of the PCA are for the Cotter Mine. There is no activity occurring at the site currently.

All NFS lands are available for the staking of claims for locatable minerals under the general mining law unless withdrawn from mineral entry by an act of Congress or through the withdrawal process under the Federal Lands Policy and Management Act. As part of the Rocky Mountain Front Mineral Withdrawal of 2000, the Secretary of the Interior withdrew acres open to the staking of claims for locatable minerals, including a withdrawal area on the Lincoln Ranger District known as Alice Creek/Indian Meadows, totaling 26,589 acres. These lands were withdrawn for 20 years, and the withdrawal could be extended for another 20 years. Under this alternative, the withdrawal would continue to protect grizzly bear habitat values and minimize the potential for grizzly bear disturbance/displacement in the withdrawal area over the life of the plan.

The existing forest plan requires that oil and gas leases must have a stipulation requiring no surface occupancy in grizzly bear habitat designated as management situation 1. No surface occupancy also applies to overlapping occupied denning and summer habitat designated as management situation 2. With a no surface occupancy stipulation, access to oil and gas deposits would require horizontal drilling from outside the boundaries of the no surface occupancy areas. This prevents the loss of grizzly bear habitat and limits the potential for habituation, disturbance, or displacement of bears.

Interaction with Yellowstone Grizzly Bears

The HNF's existing Forest Plan does not provide specific management direction aimed at supporting genetic interchange with the GYE. Available information indicates that grizzly bears are primarily moving south from the NCDE through the west side of the HNF, rather than through the Big Belt or Little Belt Mountains to the east (see Figures 1-2 and 1-3 in Appendix 1). However, there have been recent observations of grizzly bears on private lands in the Big Belt Mountains (N. Warren pers. comm.). There have been an increasing number of credible grizzly bear reports in the Blackfoot landscape south of Highway 200, as well as the Divide landscape (Mace and Roberts 2012). This area appears to have the most potential for establishing genetic connectivity through NFS lands from the NCDE to the GYE.

The Montana Highway 200 corridor through the Lincoln Ranger District, including private lands adjacent to Montana Highway 200, represents an area of potential fragmentation that could affect grizzly bear movement. Rural residences, open roads, motorized trails, developed recreation facilities, livestock grazing, mining operations, and other human activities are spread throughout the southern portion of the Divide landscape (Pengeroth 2013). For the purpose of analyzing road density, the 317 $mi^2$ Divide landscape was split into 13 management areas, all of which had road densities averaging less than 2.0 $mi/mi^2$ as of 2012. On NFS lands, the existing density of open roads and motorized trails is less than 1.5 $mi/mi^2$ (USFS 2017). This density is expected to be sufficient to support the survival of grizzly bears moving through the area (Boulanger and Stenhouse 2014). As of 2012, no new roads had been constructed by the USFS in the Divide landscape in the previous 10 years, and 23 miles of road have been decommissioned in the previous 4 years.

### *Lewis and Clark National Forest*

The Lewis and Clark National Forest (LCNF) contains land within the PCA (777,963 acres) and zone 3 (972,612 acres), with negligible amounts in zone 1 (6 acres) and zone 2 (2 acres) (Table 5). There are six BMUs on the LCNF, divided into 13 bear management subunits (Figure 1-7, Table 10). Nine of these subunits contain less than 75 percent NFS lands, and two of the subunits occur wholly within designated wilderness. A food storage order is currently in place on all LCNF lands within the PCA.

As discussed in Section C of this biological opinion, the Helena and Lewis and Clark National Forests have recently been administratively combined into the Helena-Lewis and Clark National Forest (HLCNF), but separate forest plans remain in place. The proposed action will amend both of these existing plans, but the USFS has begun the process of creating a revised, unified HLCNF Forest Plan.

<u>Motorized Route Density and Security Core Inside the PCA</u>

The existing LCNF Forest Plan (USFS 1986b) does not contain a road density standard for grizzly bears in the recovery zone/PCA. The Rocky Mountain Front Heritage Act of 2014 generally does not allow the construction of new or temporary roads within the Conservation Management Area, which covers approximately 195,073 acres of NFS lands and 13,087 acres of adjoining lands managed by the Bureau of Land Management. The law permits the use of motorized vehicles only on existing roads, trails, and areas designated for such use at the time the law was passed.

In 1998, the Interagency Grizzly Bear Access Task Force recommended that the percentage of area with open motorized route density of more than 1 mi/mi$^2$, the percentage of area with total motorized route density more than 2 mi/mi$^2$, and the percentage of secure core be evaluated using a moving window analysis method (IGBC 1998). While the LCNF does not currently have access standards for each grizzly bear subunit, the recommended moving window analyses have been conducted for travel management planning purposes (Table 10). These evaluations were associated with the Rocky Mountain Division: Birch Creek South and Badger-Two Medicine travel plans. Both travel plan decisions substantially reduced motorized access in many of the subunits on the LCNF. Currently, there are three grizzly bear subunits on the LCNF that are below the recommended level of security core (Deep Creek, Heart Butte, Pine Butte). However, these subunits are comprised of less than 75 percent of NFS lands and the current security core percentages are driven by roads on private lands. Potential adverse effects to individual grizzly bears that may be occurring on these subunits have not been analyzed in previous consultation because conditions are occurring on non-federal land and actions lack a federal nexus that would require section 7 consultation. The low road densities and overall high percentage of secure core on the Lewis and Clark National Forest provide excellent quality and availability of habitat for grizzly bears.

**Table 10. Baseline levels for motorized route density and secure core by bear management subunits on the Lewis and Clark National Forest.**

| Bear Management Subunit | > 75% NFS Lands | OMRD (percent > 1 mi/mi$^2$) | TMRD (percent > 2 mi/mi$^2$) | Secure Core (percent of area) |
|---|---|---|---|---|
| Badger | no | 0 | 0 | 73 |
| Birch | no | 0 | 0 | 93 |
| Deep Creek | no | 10 | 3 | 67 |
| Falls Creek | no | 0 | 0 | 85 |
| Heart Butte | no | 1 | 0 | 61 |
| Lick Rock | yes | 0 | 0 | 100 |
| Pine Butte | no | 7 | 2 | 64 |
| Roule Biggs | yes | 0 | 0 | 100 |
| Scapegoat | no | 5 | 1 | 78 |
| South Fork Willow | yes | 14 | 3 | 81 |
| Teton | no | 11 | 5 | 71 |
| Two Medicine | no | 2 | 1 | 78 |
| West Fork Beaver | yes | 16 | 5 | 82 |

Motorized Route Density in Zone 1, 2 and 3

As discussed above, the LCNF contains more than 972,000 acres of land within zone 3 of the action area. However, the LCNF contains only a negligible amount of land in zones 1 and 2 of the action area (6 and 2 acres respectively). The portion of the LCNF in zone 3 is comprised of disjunct mountain ranges. The lands in these isolated mountain ranges are more than 60 air miles from the PCA, and separated by land that is almost entirely in private ownership. To date, no grizzly bears have been documented on the LCNF outside of the PCA.

The existing LCNF Forest Plan does not require management for grizzly bears or their habitat outside of the PCA. Nevertheless, the plan contains direction that could provide some benefits to grizzly bears should they occur in the areas outside the PCA. In particular, the plan contains standards that control the type and intensity of activities, including road management, in order to conserve other wildlife species, such as elk. To coordinate management with the needs and objectives for elk, direction is focused on maintaining habitat effectiveness in elk summer range. Additionally, the existing Forest Plan contains the Montana Fish and Game Commission Road Management Policy, which specifically addresses road density in conjunction with percent hiding cover during the elk hunting season. While grizzly bears are not currently known to occur in zone 3 lands on the LCNF, nor are they expected to inhabit these areas in the future, the LCNF current elk management guidelines provide benefits to grizzly bears that may periodically use these areas.

Motorized Over-Snow Use During Den Emergence

No motorized over-snow use is allowed on the Rocky Mountain Ranger District as of April 1 each year except on three main access roads. Motorized over-snow use is allowed on these three

roads as long as snow conditions permit, and machines are not allowed to leave these roads after March 31. The existing LCNF Forest Plan's Developed Recreation Forest-wide Management Standard A-2 requires that management guidelines developed under the Interagency Rocky Mountain Front Wildlife Monitoring/Evaluation Program be used to avoid or mitigate conflicts between developed recreation and threatened and endangered species. One of the management guidelines is to avoid human activities in grizzly bear habitat components that provide important food sources during spring and early summer, April 1 to July 15.

High Use Non-Motorized Trails Inside the PCA

As mentioned throughout this BO, high use non-motorized trials will no longer be used in calculating secure core habitat. Therefore, each National Forest's baseline condition will present existing security core calculations using high use trails in the calculation. This will be compared to new secure core calculations conducted under the proposed action.

**Table 11. Comparing secure core calculated with and without high use non-motorized trails.**

| Bear management subunit | Percent security core with high intensity use nonmotorized trails | Percent secure core without high intensity use nonmotorized trails |
|---|---|---|
| Badger | 73 | 73 |
| Birch | 93 | 93 |
| Deep Creek | 64 | 67 |
| Falls Creek | 85 | 85 |
| Heart Butte | 61 | 61 |
| Lick Rock | 91 | 100 |
| Pine Butte | 61 | 64 |
| Roule Biggs | 89 | 100 |
| Scapegoat | 78 | 78 |
| South Fork Willow | 78 | 81 |
| Teton | 71 | 71 |
| Two Medicine | 78 | 78 |
| West Fork Beaver | 73 | 82 |

Within the PCA on the LCNF, there are 681,204 acres of secure core (88 percent) when calculated with non-motorized high use trails (Table 11). The mainline access trails into the Bob Marshall Wilderness are considered high intensity use.

Developed Recreation Sites

The South Fork Sun-Beaver-Willow, Teton Sun River, Birch Teton, and Dearborn Elk BMUs provide a total of 99 recreational residences. The South Fork Sun-Beaver-Willow BMU provides five developed recreation sites, each with a substantial number of overnight cabins and bunkhouses. The Birch Teton and Teton Sun River BMUs each have one site with a multiple cabins or bunkhouses.

There are 14 campgrounds within BMUs on the LNCF, providing approximately 148 individual campsites. Additionally, there are 7 developed recreation sites that allow only day use, and 52

trailheads within the PCA. Despite these recreational sites, there is no history of recurring conflicts or bear mortalities at developed recreation sites on the LCNF. Implementation and monitoring of the food storage orders, public education, and increases in the availability of bear-resistant food storage devices have all helped to reduce the number of grizzly bear-human conflicts on the Forest in recent decades, and these would continue. In addition, concerted efforts by MFWP to respond to grizzly bear-human conflicts, both on and off NFS lands, have substantially reduced the risks to both bears and people.

Livestock Allotments

There are 21 cattle grazing allotments and no sheep grazing allotments within LCNF portion of the PCA. In accordance with an existing Forest Plan standard, livestock grazing that affects grizzly bears and/or their habitat will be made compatible with grizzly bear needs or such uses will be disallowed or eliminated. In addition, Interagency Wildlife Management Guidelines provided in the existing Forest Plan are specifically oriented toward minimizing the potential for conflicts between grizzly bears and 1ivestock. These existing guidelines are:

1. Livestock grazing on important spring habitat for grizzly bears should be deferred until after July 1.

2. Boneyards and livestock dumps are prevalent along the East Front and are frequented by grizzly bears. Ranchers and landowners should be encouraged to place carcasses of dead livestock and garbage on remote areas of their land. Dead cows and calves should be hauled a considerable distance from calving grounds to discourage bears from feeding on carrion and newborn calves.

3. Sheep grazing allotments in management situation 1 should be eliminated.

4. In riparian habitats that receive high amounts of bear use, fencing to exclude livestock grazing and trampling may be necessary where livestock turn-out dates-prior to July 1 are allowed.

Vegetation Management

Existing Forest Plan direction on LCNF lands within the NCDE recovery zone is to follow the Interagency Grizzly Bear Guidelines for vegetation management in management situation 1 and 2 grizzly bear habitat. These guidelines specify that vegetation management projects include and specify measures that maintain and/or improve grizzly bear habitat and populations. The Interagency Grizzly Bear Guidelines for timber and fire management include the following guidelines:

1. All proposed logging and burning activities will be evaluated for their effects on grizzlies and their habitat.

2. Logging and burning activities will occur at a time or season when the area is of little or no biological importance to the bear.

3. Grizzly bear habitat will be improved through vegetation manipulation.

4. Habitat management in forested cover should provide a balance of all successional stages.

5. Roads used for timber sale purposes will be single-purpose roads only and will be closed to public use not associated with timber sale operation and administration.

6. Desirable clearcut features include (1) one or more leave or cover patches in cuts greater than 10 acres, (2) minimum soil scarification where soil disturbance impedes the reestablishment of grizzly foods, (3) slash disposal by spring broadcast burning, and (4) protection of hydric stream bottoms, wet meadows, marshes, and bogs from soil disturbance and security cover removal.

7. Prescribed burning in habitat types that are not managed for timber production could be used to approximate a natural fire frequency in order to promote berry-producing shrubs.

Mineral and Energy Development

In 2006, lands outside of designated wilderness areas on the LCNF's Rocky Mountain Ranger District were withdrawn permanently from any future mineral, oil, natural gas, or geothermal leasing and all forms of location, entry and patent under mining laws, by the Tax Relief and Health Care Act of 2006 (PL109-432). It was not necessary to withdraw lands inside designated wilderness areas from future leasing because new leases are already prohibited by the Wilderness Act in these areas. Although PL 109-432 prohibited the establishment of new leases, it did not eliminate leases that existed in 2006, at the time the law was passed. Many leases on federal lands that existed at the time PL 109-432 was passed have been voluntarily retired and as of 2017 the remaining 17 leases in the Badger-Two Medicine area of the LCNF were cancelled.

An existing LCNF forest-wide standard (G-2) for oil and gas leasing, exploration, drilling, field development, and production requires that activities be restricted, delayed, or modified to prevent adverse effects on threatened and endangered species and their habitat. Additional measures are included in the existing Forest Plan's Interagency Wildlife Management Guidelines. These guidelines require oil and gas exploration and development within grizzly bear habitat to including the following:

1. Establish flight patterns in advance when activities require the use of he1icopters. Flight patterns should be located to avoid seasonally important grizzly bear habitat constituent elements and habitat components during the designated seasonal use periods.

2. Seismic or exploratory drilling activities should not be conducted within a minimum of one mile of den sites during the October 15 to April 15denning period.

3. Seismic permits should include a provision providing for cancellation or temporary cessation of activities, if necessary, to prevent grizzly bear-human conflicts.

4. Scheduling of well drilling on adjacent sites, within important grizzly bear use areas, should be staggered to provide a disturbance free area for displaced bears.

5. Pipeline construction required for the development of a gas or oil field should be condensed into the shortest time frame possible and subject to seasonal restrictions when conducted in important grizzly bear habitat.

6. Field operation centers associated with seismic or oil/gas exploration activities should be placed carefully to avoid seasonally important habitat components or constituent elements. Such placement of sites is necessary in order to avoid direct potential conflicts between humans and grizzly bears.

***Kootenai National Forest***

The Kootenai National Forest (KNF) presents an interesting juxtaposition, as portions of two recovery areas (CYE and NDCE) occur on the Forest. The proposed action and this BO apply to the NCDE, and associated lands. Approximately 118,770 acres of the Kootenai National Forest are within the NCDE PCA (about 2 percent of the total PCA). These lands lie within the Murphy Lake BMU and a small portion of the Stillwater River BMU. Additionally, there are more than 280,000 acres of NCDE zone 1 lands on the KNF, most of which (276,822 acres) is within the Salish demographic connectivity area (Table 5).

The KNF recently underwent a Forest Plan revision in 2015. The existing KNF Forest Plan (USFS 2015) includes a number of desired conditions that are favorable for grizzly bears:

- FW-DC-WL-02: forest-wide desired conditions that creates a system of large remote areas is available to accommodate species such as grizzly bears that require large home ranges and low levels of disturbances;

- FW-DC-WL-03: long-term desired condition that promotes recovery of threatened and endangered species

- FW-DC-WL-04: desired condition that all BMUs have low levels of disturbance to facilitate denning activities and spring use, limit displacement, and limit grizzly bear-human conflicts and potential bear mortality.

- FW-DC-WL-05: recovery of the grizzly bear is promoted by motorized access management.

Further, a guideline in the existing KNF Forest Plan indicates that the Interagency Grizzly Bear Guidelines are to be applied to all relevant management activities.

Motorized Route Density and Security Core Inside the PCA

The KNF portion of the PCA contains two grizzly bear subunits within the Murphy Lake BMU: the Krinklehorn and Therriault subunits (Figure 1-8 in Appendix 1). The existing KNF Forest Plan (USFS 2015) requires maintaining or improving OMRD, TMRD, and security core in the two bear management subunits in the NCDE (in relation to the levels shown in Table 12). Currently, the Therriault bear management subunit exceeds the recommended level for OMRD (19%), but meets the levels for TMRD and security core (19% and 68% respectively). The OMRD in the Therriault subunit is due to main road that provides public access to numerous campgrounds and trailheads through the subunit. Because this is such a heavily used road that provides a high degree of access, it is likely that the OMRD in the Therriault subunit will remain greater than 19 percent, and will continue to have some adverse effects on grizzly bears due to higher risk of mortality and potential for disturbance or displacement from human activities. Existing OMRD in the Therriault subunit is likely resulting in adverse effects to individual grizzly bears. The adverse effects associated with existing conditions in this subunit were analyzed in the Service's KNF Revised Forest Plan BO (USFWS 2013).

**Table 12. Baseline levels of motorized route density and secure core by bear management subunits on the Kootenai National Forest.**

| Bear Management Subunit | > 75% NFS Lands | OMRD (% of area > 1 mi/mi2) | TMRD (% of area > 2 mi/mi2) | Secure Core (% of area) |
|---|---|---|---|---|
| Krinklehorn | yes | 18 | 11 | 75 |
| Therriault | yes | 23 | 10 | 71 |

Motorized Route Density in Salish DCA, Zones 1, 2 and 3

The KNF does not contain any lands within the action area considered zone 2 or 3. However, it does contain 276,822 acres of land within the Salish DCA (Table 5). The current density of open roads and motorized trails on KNF lands within the Salish DCA is 2.0 mi/mi$^2$. In comparison to the densities identified by Boulanger and Stenhouse (2014) for grizzly bears in Alberta, the motorized route density in the Salish DCA is below the 2.4 mi/mi$^2$ level found to support grizzly bear occupancy, and is at the 2.0 mi/mi$^2$ level found to support female grizzly bear occupancy.

The KNF contains 6,480 acreas of zone 1 lands outside the Salish DCA (Table 5). The open road and motorized trail density is 3.5 mi/mi$^2$ in this area. This area is relatively small, but it is likely that motorized route densities are adversely affecting individual grizzly bears. The adverse effects of existing linear road densities in the Salish DCA and zone 1 were addressed in 2015 when the KNF underwent consultation on a Revised Forest Plan (USFWS 2013)

The existing KNF Forest Plan refers to the areas outside of a recovery zone (PCA) where there is recurring use by grizzly bears as a "bears outside the recovery zones" (BORZ) area. The Tobacco BORZ largely overlaps with NCDE zone 1 and the Salish DCA, although the boundaries do not perfectly align (Figure 1-9 in Appendix 1). Observations of grizzly bears,

including females with cubs, have been documented in the Tobacco BORZ area and at least one female bear with cubs is known to have denned in the Tobacco BORZ area. Forest plan components that apply to all of zone 1 (and the BORZ), including the Salish DCA, include several forest-wide desired conditions:

- FW-DC-WL-02: A forest-wide system of large remote areas is available to accommodate species requiring large home ranges and low disturbances, such as the grizzly bear;
- FW-DC-WL-03: States that recovery of threatened and endangered species is the long-term desired condition;
- FW-DC-AR-07: States that the transportation system and its use have minimal impacts on resources, including threatened and endangered species; and
- GA-DC-WL-TOB-01: A desired condition for the Tobacco geographic area is low levels of human disturbance to allow for denning activities of wide-ranging carnivores that are sensitive to human disturbance (e.g., grizzly bears).

Within the Tobacco BORZ area, no increases in permanent linear miles of open or total miles of road are allowed , with listed exceptions and an allowance for temporary increases under specified conditions. These exceptions are listed in the existing KNF Forest Plan (USFS 2015) and include Alaska National Interest Lands Conservation Act (ANILCA) claims.

Motorized Over-Snow Use During Den Emergence

Currently, there are 7 miles of groomed over-snow routes and 4 miles of ungroomed over-snow routes within the PCA on the KNF. Off-route use occurs on approximately 7,905 acres that overlap with modeled denning habitat. This is approximately 18 percent of the 44,724 acres of modeled denning habitat on the KNF. Existing forest-wide standard FW-STD-WL-05 prohibits grooming of snowmobile routes in grizzly bear core habitat in the spring after April 1 of each year. Furthermore, an existing guideline in the Forest Plan (FW-GDL-WL-01) states that management activities should avoid or minimize disturbance in areas of predicted denning habitat during spring emergence (April 1 through May 1).

High Use Non-Motorized Trails Inside the PCA

There are no high use non-motorized trails within the PCA on the KNF.

Developed Recreation Sites

Currently, the Murphy Lake and Stillwater River BMUs provide 5 cabins, 19 campgrounds, 20 day-use sites, and 40 trailheads for public use. There is no history of grizzly bear-human conflicts or grizzly bear mortalities at developed recreation sites on the KNF. An existing Forest Plan standard (FW-STD-WL-04) requires that permits and operating plans specify measures to reduce grizzly bear-human conflicts and grizzly bear mortality. This is largely accomplished by ensuring that wildlife attractants (e.g., food and garbage) are inaccessible through proper storage

or disposal. Further, a forest-wide food storage and sanitation special order is in place for the KNF.

Livestock Allotments

There is one cattle grazing allotment on the KNF portion of the PCA. Eleven cattle grazing allotments overlap the area outside the PCA in the BORZ. Despite this overlap, there is no history of grizzly bear-human conflicts or management actions against grizzly bears related to grazing on the KNF.

Existing direction provided in the KNF Forest Plan serves to reduce livestock impacts to grizzly bears by minimizing conflicts on KNF lands in the PCA. A current desired condition (FW-DC-GRZ-01) states that grazing occurs at sustainable levels in suitable locations while protecting resources (e.g., grizzly bears), and standard FW-STD-WL-04 requires that permits and operating plans specify sanitation measures to properly dispose of waste and adhere to the forest-wide food/attractant storage order.

Vegetation Management

Under the existing KNF Forest Plan, there are approximately 218,212 acres suitable for timber production within BMUs of both the CYE and NCDE (16 percent of the total BMU area in both the CYE and NCDE). There is an additional 333,925 acres suitable for timber production in areas outside the PCA where grizzly bears now occur (59 percent of the area). However, within lands designated as management area 6 (general forest), none of the acres of grizzly bear security core habitat are identified as suitable for timber production. As such, vegetation management activities could only be done in security core to meet other resource needs such as insect and disease mitigation, salvage harvest, wildlife habitat diversity, and fuels management.

Vegetation management (i.e., timber harvest, salvage harvest, planting, thinning, fuels treatment, prescribed fires) may impact grizzly bears by affecting food resource availability, proximity to escape cover, human disturbance and potential for conflicts, or temporarily shifting grizzly bears into less secure areas. Under current Forest Plan direction, timber harvest units may be placed along open roads to meet objectives other than optimizing grizzly bear habitat. However, this is not expected to have a negative effect on grizzly bears since most bears avoid the area adjacent to open roads (Mace et al. 1996).

In the area outside of PCA where there is recurring use by grizzly bears (i.e., BORZ), there would be a higher degree of disturbance to bears from vegetation management activities than in the PCA. However, the existing KNF Forest Plan does not allow any increase in linear permanent miles of total and open roads, and any timber harvest activities occurring within multiple watersheds must be scheduled in a manner to minimize disturbance of grizzly bears.

Mineral and Energy Development

Under the current Forest Plan, the majority of KNF lands are available for mineral leasing (e.g., oil, gas, coal, geothermal resources, potassium, sodium, phosphates, oil shale, and sulfur). Exceptions to this would be area designated as wilderness or wilderness study area. The Ten

Lakes wilderness study area is located within the NCDE portion of the KNF. The majority of the Forest is also available for locatable minerals, with the exception of 150,100 acres that are withdrawn from mineral entry under the revised plan.

The effects of mining activities on grizzly bears are expected to be similar to those that occurred at past mining sites (e.g., Troy Mine). Such effects may include loss of habitat within the footprint of the mine, disturbance to grizzly bears from road use and mining activities, displacement from habitat from road use or mine development, or impacts to habitat connectivity. The extent of these effects would be limited by elements of the existing KNF Forest Plan. Any mining proposal on the KNF must be considered in terms of forest-wide desired conditions that are favorable for grizzly bears. These include providing remote areas for species with large home ranges, recovering federally listed species, facilitating denning and habitat use through low levels of disturbance, and managing motorized access to promote recovery (FW-DC-WL-01 through 05). Further, forest-wide guidelines and standards in the existing plan address potential effects of mining proposals on connectivity and linkage areas (FW-GDL-WL-12 through 14), food storage and attractants (FW-STD-WL-04, Food Storage Order), disturbance of grizzly bears (FW-GDL-WL-01), and access management (FW-STD-WL-02 and 03).

Interaction with Cabinet-Yaak Grizzly Bears

As mentioned above, the KNF presents a unique situation since it contains lands within two grizzly bears ecosystems (CYE and NCDE). These lands provide an opportunity for the NCDE to serve as a source population for the much smaller CYE, and it allows genetic exchange between the two ecosystems. Occupancy and movement by female bears into the area between the two ecosystems (i.e., Salish DCA and Tobacco BORZ) has been well documented. In 2006, a radio-collared female grizzly bear with a cub spent most of the summer in the Salish Mountains less than 2 miles east of the edge of the CYE recovery zone. This same female then denned within the boundaries of the NCDE PCA (Kasworm et al. 2011).

The open motorized route density within the Tobacco BORZ is approximately 2 mi/mi$^2$, which should allow for occupancy by bears but has elevated risk of mortality (Boulanger & Stenhouse, 2014). Further, demographic connectivity between the CYE and the NCDE may be hindered by Highways 2 and 93 (Servheen et al. 2001).

The forest-wide food storage order would continue to minimize the risk of grizzly bear-human conflicts, particularly in the lower elevations, which often have higher concentrations of human development. This contributes to conditions on KNF lands that facilitate movement of grizzly bears, including by females with cubs. In 2013, the Service issued a biological opinion for grizzly bears for the revised KNF Forest Plan (USFWS 2013). In the BO the Service concluded that the areas outside the PCA will likely continue to support grizzly bear movement and linkage, although some adverse effects on individual bears are anticipated from open road miles and from site-specific projects in those areas.

### *Lolo National Forest*

The Lolo National Forest (LNF) contains approximately 268,000 acres of land within the NCDE PCA (Table 5). This area is comprised of three BMUs (Rattlesnake, Upper South Fork Flathead, and Monture/Landers Fork), which are further divided into seven subunits within the LNF (Figure 1-11 in Appendix 1).

Under the existing LNF Forest Plan (USFS 1986c), the Interagency Grizzly Bear Guidelines (IGBC 1986) are applied on the portion of the LNF located within the PCA. The Interagency Grizzly Bear Guidelines were designed to address maintaining and improving habitat, minimizing grizzly bear-human conflict potential, and resolving grizzly bear-human conflicts, in coordination with various resource management programs. The LNF Forest Plan itself does not address the management of grizzly bears outside the PCA, but subsequent ESA section 7 consultations have provided analysis and guidance for habitat management in these areas.

Motorized Route Density and Security Core Inside the PCA

The existing LNF Forest Plan does not contain specific requirements regarding motorized route density or secure core in grizzly bear habitat with in the PCA. During the early 1990s, the LNF developed a grizzly bear recovery strategy that included definitions, standards, and guidelines related to road density, activity scheduling, and displacement areas that would be applied to portions of the LNF within the PCA. In 1996, the Service administratively amended the 1982 biological opinion on the LNF Forest Plan and also provided an incidental take statement regarding access management and grizzly bears. New information regarding the impacts of roads on grizzly bears, recommendations in the IGBC's Access Taskforce Report (1998), and the access management goals of the LNF's grizzly bear recovery strategy were considered in formulating the incidental take statement. Terms and conditions included, in part, requiring that no more than 19 percent of a bear management subunit exceed 1 mi/mi$^2$ of OMRD, no more than 19 percent of a bear management subunit exceed 2 mi/mi$^2$ of TMRD, and minimum security core of 68 percent or greater be maintained in each subunit. All of these requirements were to be achieved within five years.

Compliance with the terms and conditions of the 1996 incidental take statement led to substantial restrictions and decommissioning of roads on the LNF, which has been beneficial for the grizzly bear population. Currently, five of the seven bear management subunits on the LNF fully meet the criteria for motorized route density and security core (Table 13). The Mission subunit does not, but less than 75 percent of the land in this subunit is administered by the LNF. As a result, this subunit has been managed under a no net loss strategy. The Swan subunit also does not meet all of the road density and security core criteria. In 2011, the LNF reinitiated consultation for the access management strategy for the Swan bear management subunit due to noncompliance with portions of the 1996 incidental take statement. In recognition of its unique characteristics, the requirements were modified to no more than 17 percent TMRD; no more than 31 percent OMRD, with no more than 22 percent OMRD during the spring; and at least 55 percent security core (USFWS 2011c).

The relatively high road densities and low amount of secure core in the Swan and Mission bear management subunits may be displacing grizzly bears from seasonally important feeding sites, increasing the risk of habituation of some grizzly bears to human activities and increasing the risk of human-caused mortality of bears. However, given favorable habitat conditions on the rest of the LNF and across the NCDE, and the improved status of the NCDE population, the Service concluded that the adverse effects on individual grizzly bears in these subunits are not likely to result in measureable effects to the grizzly bear population (USFWS 2011c).

**Table 13. Baseline levels for motorized route density and secure core by bear management subunits on the Lolo National Forest.**

| Bear management Subunit | > 75% NFS Lands | OMRD (percent > 1 mi/mi$^2$) | TMRD (percent > 2 mi/mi$^2$) | Secure Core (percent of area) |
|---|---|---|---|---|
| Monture | yes | 1 | 1 | 99 |
| Mor-Dun | yes | 19 | 14 | 76 |
| North Scapegoat | yes | 0 | 0 | 100 |
| South Scapegoat | yes | 13 | 17 | 74 |
| Mission | no | 25 | 45 | 39 |
| Rattlesnake | yes | 3 | 11 | 79 |
| Swan | yes | 33 | 17 | 54 |

Motorized Route Density in the Ninemile DCA, Zones 1, 2 and 3

The current LNF Forest Plan does not require management for grizzly bears or their habitat outside of the PCA. The plan does however restrict open road densities to 1.1 mi/mi$^2$ in highly productive big game summer range, and requires that management of roads be coordinated with other resource objectives, including grizzly bear habitat.

In 2004, the LNF analyzed the effects of the existing Forest Plan direction on grizzly bears occurring both inside and outside the PCA. The Service issued a biological opinion and incidental take statement on August 30, 2004, which focused on access management, livestock grazing, and storage of food and attractants. The biological opinion required the LNF to contact the Service if a net increase in permanent system roads exceeded 2 linear miles in the grizzly bear distribution area outside the PCA during the subsequent 4-year period. Since 2004, no new permanent roads have been constructed in the grizzly bear distribution area outside of the PCA, and 5.14 miles have been decommissioned in the distribution area. The 2004 BO and incidental take statement was extended by the Service in 2012 (USFWS 2012). As part of this extension, the incidental take statement was amended and required the LNF to contact the Service if more than 2 miles of new permanent road over the 2004 baseline, or 7.14 miles total, are constructed over the subsequent 10 years in the distribution area outside of the PCA.

Within the Ninemile DCA, there are currently 754 miles of NFS roads and 36 miles of NFS trails that are open to public motorized use on approximately 399 mi$^2$ of LNF land. This results in an existing motorized route density of 2.0 mi/mi$^2$ (USFS 2017). With respect to the values

identified by Boulanger and Stenhouse (2014), this existing motorized route density is expected to be compatible with occupancy by female grizzly bears.

Currently, in zone 1 outside the Ninemile DCA, there are about 315 miles of NFS roads and 2 miles of NFS trails that are open to public motorized use on about 244 $mi^2$ of LNF land. There is an existing open road density of about 1.3 $mi/mi^2$ (USFS 2017). This existing linear density of motorized routes is below the values identified in Alberta by Boulanger and Stenhouse (2014) that support bear occupancy (<2.4 $mi/mi^2$) and occupancy by females (<2.0 $mi/mi^2$).

Motorized Over-Snow Use During Den Emergence

The LNF portion of the NCDE is adjacent to the town of Seeley Lake, Montana, a snowmobile destination area. Groomed snowmobile routes and snowmobile play areas are concentrated outside the PCA except for a large block of former Plum Creek Timber Company land in the Mission Subunit, and lower elevation areas in the Swan and Mor-Dun subunits. The Monture, North Scapegoat, South Scapegoat, and Rattlesnake Subunits are dominated by designated wilderness and roadless areas where snowmobile use is restricted by topography or administrative closures. Spring road closures are in place around Morrell Falls, Richmond Peak, and Clearwater Lake to specifically protect grizzly bears from late-season snowmobiling and other motorized disturbance during the den emergence period.

All areas considered security core habitat on the LNF (more than 200,000 acres) are currently closed to motorized over-snow use. The LNF does include approximately 49,920 acres of lands outside of core that open to motorized over-snow use during the winter. In addition to these areas, there are two groomed over-snow routes on the LNF totaling 94 linear miles. These groomed routes also occur outside security core habitat.

High Use Non-Motorized Trails Inside the PCA

As previously discussed, high use non-motorized trials will no longer be used in calculating grizzly bear secure core habitat under the proposed action. Therefore, each National Forest's baseline condition will present existing security core calculations using high use trails in the calculation. This will be compared to new secure core calculations conducted under the proposed action.

Within the PCA on the LNF, there are 209,865 acres of security core (78 percent) when calculated with non-motorized high intensity use trails, and 220,991 acres of secure core (82 percent) when calculated without non-motorized high intensity use trails (broken down by bear management subunit in Table 14).

**Table 14. Comparing secure core calculated with and without high use non-motorized trails.**

| Bear Management Subunit | Percent security core with high intensity use nonmotorized trails | Percent secure core without high intensity use nonmotorized trails |
|---|---|---|
| Monture | 99 | 99 |
| Mor-Dun | 72 | 76 |
| North Scapegoat | 94 | 100 |

| | | |
|---|---|---|
| South Scapegoat | 73 | 74 |
| Mission | 38 | 39 |
| Rattlesnake | 60 | 79 |
| Swan | 54 | 54 |

Developed Recreation Sites

A forest-wide standard in the existing LNF Forest Plan states that the LNF will not significantly expand the capacity of developed recreation sites during the next 10-year period. However, this standard does not include trailheads in the definition of developed recreation sites. Instead of expansion, emphasis will be placed on increasing the use of existing sites by making them usable by a wide segment of users, including persons who are elderly or disabled. Those existing sites receiving low levels of public use, or that are not cost effective to operate, will be considered for temporary or permanent closure. Recently, the LNF has had to respond to increasing use in some areas by hardening dispersed sites and installing facilities to provide for sanitation and public safety.

Each of the three bear management units (Monture Landers Fork, Rattlesnake, and Upper South Fork Flathead) has one site with one cabin for overnight use. The Monture Landers Fork BMU has three campgrounds providing a total of 12 individual campsites, and the Rattlesnake BMU has one campground with three campsites. There are seven day-use developed recreation sites, five in the Monture Landers Fork BMU and two in the Upper South Fork BMU, and 24 trailheads in total among the BMUs (14 in Monture Landers Fork and five each in Rattlesnake and Upper South Fork Flathead). It should also be noted that there is one ski resort located on LNF lands, but it is not located within the PCA.

From 2000 through 2010, four known grizzly bear mortalities occurred within the LNF boundary. Further, 14 grizzly bear mortalities occurred outside the LNF, but within the occupied distribution area south of the Forest boundary (Mace and Roberts 2011). Causes of death included collisions with cars, mistaken identity, illegal shooting, and defense of life. None of the mortalities on the LNF were known, or suspected, to be associated with food conditioning or unsecured attractants at developed recreation sites.

Livestock Allotments

On the LNF there is only one cattle grazing allotment within the PCA (located on the Seeley Lake Ranger District), and there are no sheep grazing allotments. The existing Forest Plan directs that grazing be managed to reduce the number of grizzly bear-human conflicts, and reduce or eliminate the need for removal of grizzly bears from the population.

Outside of the PCA there are three cattle grazing allotments on the LNF. One is located on the Ninemile Ranger District, but it has not been active since 1994. The second cattle allotment is on the Superior Ranger District, located near St. Regis, Montana. The final allotment is located within zone 1 on the Missoula Ranger District. No known incidents of grizzly bear mortality or grizzly bear-human conflicts resulting from livestock allotments have occurred on the LNF.

In 2004, the LNF analyzed the effects of the existing Forest Plan direction on grizzly bears occurring both inside and outside the PCA. The Service issued a biological opinion and incidental take statement on August 30, 2004, which focused on access management, livestock grazing, and storage of food and attractants (USFWS 2004). The 2004 BO and incidental take require the LNF to report the following in regard to livestock: (1) conflicts and management actions on the LNF in the distribution zone; (2) if reinstatement of sheep grazing is considered; and, (3) any livestock depredation, conflicts due to improper food/attractant storage or management removal or human-caused death. The requirements of this BO will remain intact following implementation of the proposed amendments.

Vegetation Management

Current LNF direction indicates that vegetation management should adhere to the Interagency Grizzly Bear Guidelines. These guidelines specify that measures to maintain or improve grizzly bear habitat and populations will be incorporated in project planning. Below is a summary of this guidance:

1. All proposed logging and burning activities will be evaluated for their effects on grizzly bears and their habitat.

2. Logging and burning activities will occur at a time or season when the area is of little or no biological importance to the grizzly bears.

3. Grizzly bear habitat will be improved through vegetation manipulation.

4. Habitat management in forested cover should provide a balance of all successional stages.

5. Roads used for timber sale purposes will be single-purpose roads only and will be closed to public use not associated with timber sale operation and administration.

6. Desirable clearcut features include : (1) one or more leave or cover patches in cuts over [greater than] 10 acres; (2) minimum soil scarification where soil disturbance impedes the reestablishment of grizzly foods; (3) slash disposal by spring broadcast burning; and (4) protection of hydric stream bottoms, wet meadows, marshes, and bogs from soil disturbance and security cover removal.

7. Prescribed burning in habitat types that are not managed for timber production could be used to approximate a natural fire frequency in order to promote berry-producing shrubs.

Although temporary disturbance to grizzly bears may occur during vegetation management projects, the guidelines included in the existing LNF Forest Plan likely contribute to desirable conditions for grizzly bears.

Mineral and Energy Development

Under the existing Forest Plan, LNF lands are available for mineral and energy development not designated as wilderness. However, the plan explicitly states: "Before oil and gas lease stipulation recommendations are made, a site specific analysis of environmental effects will be made. Stipulations which are displayed in Appendix F and based upon the Environmental Analysis for Oil and Gas of non-wilderness Lands on the Lolo National Forest, 9/20/82, will be recommended in accordance with management area direction in Chapter III. In some instances, the stipulations will include a provision for 'no surface occupancy.' The lessee or designated operator has the right to explore for and extract oil/gas from his/her lease in accordance with the stipulations attached to the lease."

The magnitude of effects from leasable or locatable minerals exploration and development thus would be limited by provisions of the existing Forest Plan. Any such proposals would be subject to additional site-specific analysis. Project development and mitigation plans would be designed to avoid, minimize, or compensate for any adverse effects associated with the mining proposal.

Interaction with Cabinet-Yaak Grizzly Bears

Much like the KNF, the LNF contains lands pertinent to multiple grizzly bear ecosystems (i.e., NCDE, CYE and BE). These lands provide an opportunity for the NCDE to serve as a source population for much small ecosystems (CYE), or ecosystems that are yet to be occupied by grizzly bears (BE). Further, these lands facilitate genetic exchange among grizzly bear ecosystems, potentially resulting in a more robust population of grizzly bears in the lower United States.

The existing LNF Forest Plan does not have specific provisions that encourage demographic connectivity to the CYE or BE. However, it does contain a standard directing management practices developed in a fashion that is compatible with habitat needs of threatened and endangered species, and are consistent with the goals of recovery.

## F. EFFECTS OF THE ACTION

*Effects of the action* are "…the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action that will be added to the environmental baseline." [50 CFR §402.02] These effects are considered along with the predicted cumulative effects to determine the overall effects to the species for purposes of preparing a BO on the proposed action. Direct effects are defined as those that result from the proposed action and directly or immediately impact the species or its habitat. Indirect effects are those that are caused by, or will result from, the proposed action and are later in time, but still reasonably certain to occur.

This section considers the effects to grizzly bears from amending the Forest Plans for the Helena, Lewis and Clark, Kootenai, and Lolo National Forests to incorporate the habitat-related direction

of the draft Northern Continental Divide Ecosystem (NCDE) Grizzly Bear Conservation Strategy (USFWS 2013c). Effects to grizzly bears are discussed in a general fashion, followed by a break-down by National Forest.

This biological opinion does not provide an analysis for effects of specific actions. Rather, the analysis is a broad-scale examination of the types of activities that can be conducted under each National Forest's amended Forest Plan that could potentially occur in grizzly bear habitat and result in effects on grizzly bears. Because of the broad-scale analysis, each National Forest will remain responsible for project-specific section 7 consultation on all future projects that may affect the grizzly bear or its habitat, even if those projects are consistent with the amended Forest Plan.

## 1. General Effects

### *Access Management*

The IGBC Taskforce provided standardized definitions for roads and standardized methods to measure road densities and define analysis areas as a result of grizzly bear research information on open and total road densities and grizzly bear core areas (IGBC 1994, 1998). The Service considers the management of roads one of the most important variables in grizzly bear habitat conservation. This section provides a general discussion of direct and indirect effects of motorized access management on grizzly bears and on the environmental baseline as affected by road densities.

Research has confirmed adverse impacts of roads on grizzly bears (Mace et al. 1996, Mace et al. 1999). Negative impacts associated with roads and excessive road densities influences grizzly bear population and habitat use patterns in numerous, widespread areas. These impacts are summarized in the following section, and some can be found in detail in The Grizzly Bear Compendium (IGBC 1987). Impacts reported in this document include:

- Direct mortality from vehicle strikes and illegal harvest (i.e., misidentification, poaching);
- Indirect mortality resulting from habituation to humans;
- Avoidance/displacement of grizzly bears away from roads and road activity; and
- Core habitat modification and/or fragmentation due to roads and road construction (including vegetative and topographic disturbances).

<u>Grizzly Bear Mortality</u>

Mortality is the most serious consequence of roads in grizzly bear habitat. Mortalities can occur from illegal shooting, collisions with vehicles, or indirectly through habituation to human presence (resulting in management removal or other lethal outcome). The specific relationship between roads and the mortality risk to grizzly bears is difficult to quantify, but the level of

human use is one of several factors influencing the mortality risk associated with any road. Forest roads facilitate human access into grizzly bear habitat, which directly or indirectly increases the risk of mortality to grizzly bears. Historically, increasing road networks on the landscape resulted in grizzly bears becoming increasingly vulnerable to illegal and legal harvest in Montana (Mace et al. 1987) and in the Yellowstone region (Mattson et al. 1992). In southeastern British Columbia, McLellan and Shackleton (1988) reported roads increased access for legal hunters and poachers, the major source of adult grizzly mortality. McLellan (1989b) reported that 7 of 13 successful legal hunters interviewed had been on a road when they harvested their grizzly bear, and McLellan and Mace (1985) found that a disproportionate number of mortalities occurred near roads. In the Yellowstone ecosystem, Mattson and Knight (1991) reported that areas influenced by secondary roads and major developments were most lethal to grizzly bears. Aune and Kasworm (1989) reported 63 percent of known, human-caused grizzly bear deaths on the eastern front of the Rocky Mountains occurred within 1 kilometer (0.6 miles) of a road, including 10 of 11 known female grizzly bear deaths. In Montana, Dood et al. (1986) reported that 48 percent of all known, non-hunting mortalities during the period of 1967 through 1986 occurred within 1 mile of roads. Grizzly bears were also killed by vehicle collision, the most direct form of road-related mortality (Greer 1985, Knight et al. 1981, Palmisciano 1986).

The presence of roads alone does not necessarily result in direct mortality of grizzly bears, but the proximity of the roads to human population centers, and dispersed recreation in habitat around roads, can pose considerable risks to grizzly bears. Social values and attitudes also contribute to the level of mortality risk to grizzly bears. Incidental or accidental human-caused grizzly bear mortality, combined with a few individuals intent on illegally shooting grizzly bears, can collectively result in detrimental effects to grizzly bear populations. Access management can be instrumental to reducing mortality risk to grizzly bears by managing the present and anticipated future road use-levels resulting from the increasing human population in western Montana.

Displacement

Some grizzly bears, particularly sub-adults, may readily habituate to humans and consequently suffer increased mortality risk. However, many grizzly bears under-use or avoid otherwise preferred habitats that are frequented by humans. This represents a modification of normal grizzly bear behavior that results in detrimental effects. Negative association with roads arises from the fear of vehicles, vehicle noise, and other human-related activities around roads. These associations can also stem from human scent along roads, and hunting and shooting along or from roads. Grizzly bears that experience these negative consequences learn to avoid the disturbance generated by roads and may not choose to use these habitats even long after road closures.

All factors contributing to direct links between roads and displacement from habitat have not been quantified. As with mortality risk, the level of road-use by people is likely an important factor in assessing the potential displacement caused by any road. However, research indicates that grizzly bears consistently were displaced from roads and habitat surrounding roads, often

despite relatively low levels of human use (Mattson et al. 1987, McLellan and Shackleton 1988, Aune and Kasworm 1989, Kasworm and Manley 1990, Mace and Manley 1993, Mace et al. 1996).

Avoidance behavior is often strongest in adult grizzly bears, with males selecting for high quality habitats and absence of humans (Gibeau et al. 2002). Males that were found using high quality habitat near roads, did so during the night where hiding cover was available (Ibid.). In contrast, adult females were more likely to avoid humans and roads all together, rather than seek out the highest quality habitats (Gibeau et al. 2002). Mueller et al. (2004) reported all age and sex classes used habitats closer to high-use roads and development when humans were least active. Not surprisingly, they also found that bears showed a considerably greater avoidance of high-use roads and development during periods of high human activity. The study also found that, regardless of the time of day, sub-adult bears were found closer to high-use roads than adult bears. This trend was also documented by Gibeau et al. (2002), who demonstrated that sub-adult grizzly bears were almost always closer to human activity than adults.

In Montana, Aune and Stivers (1982) reported that grizzly bears avoided roads and adjacent corridors even when the area contained preferred habitat for breeding, feeding, shelter and reproduction. McLellan and Shackleton (1988) found that grizzly bears used areas near roads less than expected in southeastern British Columbia, and estimated that 8.7 percent of the total area was rendered incompatible for grizzly bear use because of roads. Mace and Manley (1993) reported use of habitat by all sex and age classes of grizzly bears was less than expected where total road densities exceeded two miles per square mile. They also found that adult grizzly bears used habitats less than expected when open motorized access density exceeded one mile per square mile. Further, female grizzly bears in the study area tended to use habitat more than 0.5 mile from roads or trails greater than expected.

Mace et al. (1996) and other researchers have used 500 meters as the zone of influence around roads. Waller and Servheen (2005) also documented avoidance of areas within 500 meters of US-2 in Montana. Benn and Herrero (2002) set zones of influence of 500 meters and 200 meters around roads and trails, respectively. They reported that all 95 human-caused grizzly bear mortalities with accurate or reasonable locations that occurred in Banff and Yoho National Parks between 1971 and 1998 occurred within these zones of influence along roads and trails or around human settlements.

Conversely, grizzly bears can become conditioned to human activity and in some instances show a high level of tolerance especially if the location and nature of human use are predictable (Mattson 1993). In Glacier National Park, Jope (1985) suggested grizzly bears in parks habituate to high human use and showed less displacement, even in open habitats. Yonge (2001) found that grizzly bears near Cooke City, Montana, were willing to consistently forage in very close proximity to high levels of human use if cover was sufficient and energetically efficient feeding opportunities were present. In Montana's Swan Valley, Ruby (2014) used location data from 24 collared grizzly bears to show nocturnal use of highly roaded habitat.

Both Mattson (1993) and Yonge (2001) postulated that areas with higher levels of human activity might have a positive effect for bears by serving as a kind of refugia for weaker population cohorts (subadults and females with cubs) seeking to avoid intra-specific competition (i.e., conflict with adult males). However, Mattson qualified this observation by adding that the beneficial effects vary as to whether hunting is allowed, and how closely the human population is regulated. Further, food conditioned grizzly bears were much more likely to be killed by humans.

Core Habitat Fragmentation

The IGBC Taskforce (IGBC 1994) recognized the importance of secure areas to grizzly bears. The Taskforce defined "core areas" as those areas with no motorized access (during the non-denning period) or heavily used foot/livestock trails, providing some level of secure habitat for grizzly bears. Motorized use, such as snowmobiling, or that associated with timber harvest, could occur within core areas during the denning (winter) period. The Taskforce recommended the establishment of core areas in all subunits, the size of core area should depend on ecosystem-specific habitat conditions, and that a core area remain intact on the landscape for at least 10 years.

Mace and Manley (1993) reported adult females used habitat further than 0.5 mile from roads or trails more than expected. They also found that 21 percent of the composite home range had no trails or roads and 46 percent was unroaded (greater than 0.5 mile from a road). Substantive blocks of unroaded habitat were components of all adult female home ranges. Of the adult female locations within unroaded polygons, 83 percent occurred within 7 polygons that exceeded 2,260 acres in size. Based on grizzly bear habitat use data from the GYE, Mattson (1993) recommended that micro scale security areas in that region be an absolute minimum of 6 kilometers (3.6 miles) in diameter or 28 square kilometers (10 square miles) and should be secure for a minimum period of 5, or preferably 10, years.

These large blocks of secure “core” habitat are vital to grizzly bears, providing areas that are free from human influence. Grizzly bear secure core habitat allows bears to exist under natural, free-ranging conditions. In most grizzly bear ecosystems in the lower U.S. roads are the primary threat to large blocks of grizzly bear secure core habitat by facilitating human presence, or by fragmenting large swaths of habitat into smaller blocks.

### *Attractants and Habituation to Humans*

Continued exposure to human activity without negative consequence can result in habituation, which is a loss of a grizzly bear’s natural wariness of humans. Habituated grizzly bears may safely adjust noise and activity and can demonstrate a high degree of tolerance. Tolerance is especially likely if the location and nature of human use are predictable, and do not result in overtly negative impacts for grizzly bears (Mattson 1993).

Improperly stored food, garbage, livestock or pet foods can lure grizzly bears to areas near people and pose a significant risk of habituating bears to human presence and/or conditioning grizzly bears to seek out anthropogenic foods and attractants. Food conditioned grizzly bears

may enter unsecured garbage receptacles, sheds and other buildings in search of a reward. Accessibility to human related attractants and conditioning to those rewards can lead to management removal of grizzly bears and additionally, mortality of grizzly bears by people defending their life and property.

Grizzly bears are particularly susceptible to anthropogenic foods and attractants during years of poor natural production. Information and education programs, and food storage orders are particularly important during years of poor natural food production, and in seasons of high nutritional and energy needs for bears. MFWP has stated that perhaps the greatest advancement in the management of problem bears has been the development of bear management specialist positions (USFWS 2011b). The combination of shortened response time to reports of grizzly bear conflicts, preventative actions to remove attractants, the deterrent effects of local law enforcement, and perhaps most important, building community involvement in the management and conservation of grizzly bears, has been invaluable. These efforts assist in dealing with nuisance bears, preventing habituation of bears, and fostering local public support of grizzly bear conservation (MFWP 2005; Wenum 2011).

### 2. Effects Specific to the Action

This section considers the effect the Forest Plan amendments will have on grizzly bears in the NCDE. Effects will be discussed in terms of standards, guidelines and desired conditions that will be included in each Forest's amended plan. Many of the plan components included under the proposed action will be incorporated into all four of the Amendment Forest's Forest Plans, but there are some components that will be specific to an individual National Forest. As a result, some of the effects discussed below may be similar among each Amendment Forest.

Regarding the Interagency Grizzly Bear Guidelines: The proposed action would remove specific reference to the Interagency Grizzly Bear Guidelines, including the delineation of management situations, from the existing Forest Plans. However, much of the existing forest plan management direction that is based on the Interagency Grizzly Bear Guidelines would be retained. Additional desired conditions, standards, guidelines, and monitoring items would be added, and are discussed below.

Appendix 2 provides a complete list of all standards, guidelines and desired conditions that will be adopted as part of the proposed action. Additionally, Appendix 3 presents a direct comparison of current Forest Plan management direction and amended Forest Plan direction.

***Helena National Forest Plan***

<u>Motorized Route Density and Secure Core Inside the PCA</u>

The proposed action would implement desired condition NCDE-DC-AR-01, which would establish the intent to manage OMRD, TMRD, and secure core in a manner that contributes to a stable and increasing NCDE grizzly bear population. The following discussion presents standards associated with motorized routes and secure core in the PCA that will contribute to a stable and/or increasing NCDE grizzly bear population.

The HNF's Amended Plan will include standard NCDE-STD-AR-01, which would establish direction regarding administrative use of restricted roads. This standard would not be a change from current operating procedures as guided by the existing Forest Plan. Administrative use could have some impact by disturbing bears in the affected area. However, the risk of human-caused mortality would not increase because of the controls the HNF maintains over its own employees and other authorized users.

Implementation of standard NCDE-STD-AR-02 would require no net increase from the baseline for OMRD and TMRD, and no net decrease from the baseline for the percent of secure core within bear management subunits in the PCA. This standard has an associated monitoring component (NCDE-MON-01) that requires the Forest Service to monitor OMRD, TMRD, and secure core in each bear management subunit and to compare those conditions to the baseline. The results of this monitoring are to be reported biennially.

As discussed in the *Description of the Proposed Action* section, newly implemented Forest Plan direction considers "baseline" to be a subunit's access conditions as of December 31, 2011, or as modified by changes evaluated through separate section 7 consultation with the Service (see Table 7). Thus, it is likely that existing conditions would generally be maintained, with no requirement for future reductions of OMRD, TMRD, or increases in secure core. It is anticipated that the Red Mountain subunit will continue to contribute adverse effects to grizzly bears since route densities are greater than those known to adversely affect grizzly bears (19% for each), and the percentage of secure core is less than the desirable threshold also known to adversely affect grizzly bears (at least 68%).

The proposed action will also amend the HNF's Forest Plan to include a standard that will allow temporary changes in OMRD, TMRD, and secure core during project activities (NCDE-STD-AR-03). The standard will allow projects to temporarily increase OMRD by five percent, temporarily increase TMRD by three percent, and temporarily decrease secure core by two percent. Changes in motorized access conditions will be measured using a ten year running average, and will be compared against the baseline as above (see Appendix 2 for this procedure and a hypothetical example). These allowances are based on analyses and ESA section 7 consultations on six timber harvest and road management projects affecting 18 bear management subunits on the Flathead and Lolo National Forests (USFWS 2013c). These projects were conducted between 2003 and 2010, a period during which the NCDE grizzly bear population was stable to increasing (Kendall et al. 2009; Mace and Roberts 2012).

As discussed in Section E.5 (*Environmental Baseline*), existing conditions in the Red Mountain subunit are adversely affecting individual grizzly bears due to OMRD and TMRD. These adverse effects were analyzed during in the Blackfoot non-winter travel plan consultation (USFWS 2016a). As such, incidental take of grizzly bears resulting from access condition within the PCA has already been analyzed, mitigated and exempted.

While this new standard will allow a temporary decrease in secure core, the ability to conduct projects within secure core will be constrained by overlapping designated wilderness, proposed

wilderness, inventoried roadless areas, and other forest plan management area designations that restrict road development. The HNF has about 129,000 acres of secure core, of which about 127,000 acres are in wilderness or roadless areas. Only about 1 percent of the existing secure core habitat on the HNF occurs in areas that even allow road access (Figure 1-6). The temporary changes to OMRD, TMRD, or secure core will be monitored by the Forest Service for its projects (see NCDE-MON-05 in Appendix 2), and the grizzly bear population will be monitored by MFWP.

Newly implemented guidelines in the HNFs amended Forest Plan also provide direction that on-the-ground project implementation should not exceed 5 years (NCDE-GDL-AR-01). Further, guideline NCDE-GDL-AR-02 ensures that pre-project conditions (i.e., OMRD, TMRD, core) would be restored within 1 year of project completion. While projects meeting these guidelines may result in some adverse effects to grizzly bears as a result of displacement from preferred habitat, they would provide limits on the amount and duration of the disturbance so that bears are not permanently displaced by human activities.

NCDE-STD-AR-04 would allow temporary use of restricted roads for motorized use by the public for special purposes such as firewood gathering. The standard also indicates that public use in these areas will not last longer than 30 days, and will only occur outside the spring and fall bear hunting seasons. Further, public motorized use would not be permitted within secure core. There would be some increase in disturbance and the risk of grizzly bear mortality in the PCA associated with this use, but the amount and duration would be limited.

The newly implemented HNF Forest Plan components associated with the proposed action are intended to limit OMRD and TMRD, and to maintain sufficient secure core in the PCA. We anticipate that these limits will continue to support a stable and/or increasing NCDE grizzly bear population. Some adverse effects to grizzly bears in the Red Mountain bear management subunit will likely continue from existing access conditions. Additionally, adverse effects from short-term disturbance may also occur as a result of temporary road use in the PCA. The risks of grizzly bear-human conflicts and grizzly bear mortality may increase, but levels are expected to remain low on HNF lands within the PCA.

Motorized Route Density in Zones 1, 2 and 3

The proposed action will add standard NCDE-HNF Zone 1-STD-01 to the HNFs existing Forest Plan. This standard will apply to all lands on the HNF designated as zone 1 (Figure 1-6), and would require no net increase (greater than the 2011 baseline) in the density of routes (i.e., roads and trails) open to public motorized use during the non-denning season. Further, the proposed amendments include monitoring component NCDE-MON-07, which states that the density of motorized routes open to the public during the non-denning season will be monitored and compared to the baseline on all HNF lands designated as zone 1. The results of this monitoring effort will be documented in a biennial report. This would maintain the conditions that have been compatible with a stable to increasing grizzly bear population that has been expanding into the area south of Montana Highway 200. Existing HNF Forest Plan management direction

applicable to zones 2 and 3 would continue to govern the development and management of motorized routes in those portions of the HNF.

Existing linear road densities within zones 1 of the HNF may be adversely affecting grizzly bears by temporarily disturbing individuals. As discussed in Section E.2 (*Environmental Baseline*), these adverse effects were already analyzed by the Service when the HNF consulted on the Blackfoot Non-Winter Travel Plan (USFWS 2016a). Therefore, incidental take of grizzly bears resulting from linear road densities outside the PCA have already been analyzed, mitigated and exempted. We do not anticipate further adverse effects beyond what was analyzed in the Divide Travel Plan consultation to occur as a result of the proposed action.

Grizzly bears may occur on HNF lands designated as zone 2 and zone 3. These areas include the Elkhorn and Big Belt Mountains (see Figures 1-2 and 1-3). While grizzly bears may occur in these areas, there are no records indicating that bears are continually occupying these portions of the HNF. However, occupancy may occur in the future given the documented growth in size and distribution of the NCDE population. Motorized route densities in zone 2 and zone 3 on the HNF may be adversely affecting individual grizzly bears, but adverse effects on grizzly bears in these areas would not have negative effects on the status of the NCDE grizzly bear population since they would occur outside the recovery zone/PCA. Grizzly bear recovery zones were established to identify areas necessary for recovery of the species, and are the areas in each ecosystem within which the criteria for recovery are measured. As stated in the Grizzly Bear Recovery Plan (USFWS 1993), the NCDE recovery zone (i.e., PCA) is adequate for managing and promoting the recovery of the NCDE grizzly bear population. We conclude that adverse effects to individual grizzly bears in zone 2 and zone 3 may be occurring and will likely continue to occur. However, we also conclude that these effects will not preclude recovery of the NCDE grizzly bear population because these impacts occur outside the NCDE recovery zone/PCA. The effects to grizzly bears in these areas will be further analyzed in the section 7 consultation on the combined Helena-Lewis and Clark National Forest's Revised Forest Plan, which is expected to occur within the next one to two years.

Motorized Over-Snow Use During Den Emergence

Under the forest plan amendments, NCDE-STD-AR-08 requires no net increase in the percentage of area or miles of routes that are designated for motorized over-snow vehicle use on NFS lands in the PCA during the den emergence time period. The standard would provide additional assurance that potential impacts to bears, particularly females with cubs, would not increase over time. The proposed action does not include restrictions in motorized over-snow use during the den emergence period outside of the PCA.

As presented in the *Environmental Baseline* section, the HNF contains approximately 3,200 acres of land within the PCA open to motorized over-snow use during the den emergence period. The adverse effects to bears as a result of this overlap were analyzed in the Blackfoot winter travel plan consultation. We do not anticipate that implementation of NCDE-STD-AR-08 will have additional adverse effects to grizzly bears and it will limit potential impacts of over-snow vehicles on individuals that have just emerged from the den.

High Use Non-Motorized Trails Inside the PCA

As part of the proposed action, the definition of secure core used in the draft NCDE grizzly bear conservation strategy (USFWS 2013c) will be incorporated into the HNF Forest Plan. This new definition does not include high use non-motorized trails. The lack of demonstrable effects and the difficulty in determining what constitutes a "high use" non-motorized trails led to the decision by the grizzly bear conservation strategy team to eliminate this from the definition of secure core.

Within the HNF's portion of the PCA, there is a total of 126,782 acres of secure core when calculated with high use non-motorized trails, and a total of 129,039 acres of secure core when calculated without high use non-motorized trails. Table 9 in the *Environmental Baseline* section of this document shows how this change in definition will be reflected in each of the HNF's three grizzly bear subunits. By excluding high use non-motorized trails from the calculation, the PCA (as a whole) on the HNF will go from 69% to 70% secure core habitat.

This change in methodology does not constitute a change in effects to grizzly bears. Rather, this is a reflection of altered analytical techniques. When assessing temporary decreases in secure core (as allowed under previously discussed standards) each subunit will undergo the same change when calculating pre-project secure core percentages. Therefore, any changes in secure core conditions resulting from the omission of high use non-motorized trails will also be reflected in baseline conditions.

Developed Recreation Sites

Under the proposed action, the HNF's Forest Plan will be amended to add several components meant to address developed recreation sites that are managed for overnight use. A newly implemented desired condition, NCDE-DC-AR-02, indicates that the number, capacity, and improvements of developed recreation sites will provide for user comfort and safety while minimizing the risk of grizzly bear–human conflicts on NFS lands within the PCA. Desired condition NCDE-DC-AR-03 states that increases in the number and capacity of developed recreation sites on NFS lands that managed for overnight use during the non-denning season will be at levels that contribute to a stable and increasing grizzly bear population in the NCDE.

The proposed action will also amend the HNF's Forest Plan to include standards and guidelines designed to implement the desired conditions presented above. Guideline NCDE-GDL-AR-03 states that if the number or capacity of day use or overnight developed recreation sites is increased within the NCDE PCA, the project should include measures to reduce the risk of grizzly-bear human conflicts in that BMU. These measures can include additional public information and education, installation of food-hanging poles or bear-resistant food and garbage storage devices, or an increase in law enforcement presence.

Standard NCDE-STD-AR-05 would set a limit of one increase in the number or the overnight capacity of developed recreation sites designed and managed for overnight use per BMU per decade on NFS lands within the PCA. This standard has an associated monitoring component (NCDE-MON-02) that requires monitoring of the developed recreation sites in each bear

management unit, and a comparison of conditions to the baseline. The results of this monitoring are to be reported biennially. Further, standard NCDE-STD-AR-07 would require that new or reauthorized ski area permits include mitigation measures to reduce the risk of grizzly bear-human conflicts.

These proposed plan components may result in adverse effect to grizzly bears by increasing the likelihood of conflict with humans. However, the proposed components were developed to be consistent with what has occurred elsewhere in the NCDE through ESA section 7 consultation while grizzly bear population was stable to increasing. Although there may be an increased risk of grizzly bear-human conflicts as a result of some increase in developed recreation sites with overnight use in the future, the risk of mortality to grizzly bears would be limited under the proposed action through the measures stated above. Implementation and monitoring of food storage orders, public education, and increases in the availability of bear-resistant food storage devices will also help to reduce the number of grizzly bear-human conflicts on the HNF.

An increase in developed recreation during the non-denning season may represent adverse effects to grizzly bears in the NCDE. However, the effects of such increases are difficult to consider at this time. While the proposed action will limit the volume and rate of increase (1 site per BMU per decade), new developed recreation sites may occur in a variety of manners. For example, the effects of installing a new developed recreation site near valuable grizzly bear habitat (e.g., riparian areas, meadows) will likely be much different than the effect of increasing the capacity of an already heavily used campground.

Future increases in developed recreation sites available for use during the non-denning season will undergo a separate section 7 consultation, as appropriate. Given the difficulty in forecasting details associated with these increases, we have determined that it would be more appropriate to assess potential adverse effects to grizzly bears during project-specific consultation or other environmental review.

Livestock Allotments

The proposed action will retain existing HNF Forest Plan standards and guidelines relevant to livestock allotments in grizzly bear habitat. However, the proposed action also includes amending the HNF's Forest Plan to include new components meant to further reduce the effect of livestock allotments on grizzly bears. New standards would require new or reauthorized grazing permits, and temporary grazing permits for small livestock, that occur within the PCA and zone 1 to incorporate measures to reduce the risk of grizzly bear-human conflicts (NCDE-STD-GRZ-01 & 06). The proposed amendments would also prohibit an increase in the number of cattle allotments (NCDE-STD-GRZ-05), or in the number of sheep allotments or permitted sheep animal unit months (NCDE-STD-GRZ-02 and NCDE-STD-GRZ-04), in the PCA. These standards have an associated monitoring component (NCDE-MON-03) that requires monitoring of the number of livestock allotments and sheep animal unit months in each bear management subunit within the PCA, and comparison of conditions to the baseline. Furthermore, NCDE-MON-10 requires monitoring of all grizzly bear-livestock conflicts that may occur on NFS lands in the PCA and zone 1. The results of these monitoring efforts will be reported biennially.

Under the amended Forest Plan, all livestock carcasses in the PCA and zone 1 must be reported within 24 hours (NCDE-STD-GRZ-03).

Guideline NCDE-GDL-GRZ-01 encourages reducing the number of open or active sheep grazing allotments within the PCA if an opportunity exists with a willing permittee in an effort to reduce the risk of conflicts with grizzly bears. A new guideline (NCDE-GDL-GRZ-02) also calls for the development of an allotment management plan, and plan of operations for allotments in the PCA. These should specify any needed measures to protect key grizzly bear food production areas (e.g., wet meadows, stream bottoms, aspen groves, and other riparian wildlife habitats) from conflicting and competing use by livestock.

The existing livestock allotments have been compatible with a stable to increasing grizzly bear population. Based on the lack of history of conflicts, the mortality risk associated with livestock grazing on the HNF appears to be low. However, there is a history of some conflict on private lands near the HNF (see Environmental Baseline). Potential adverse effects associated with livestock allotments on the HNF were addressed in a 2014 biological opinion (USFWS 2014). Existing terms and conditions in the 2014 biological opinion require monitoring elements that will also be included in proposed standards presented above. As such, take of grizzly bears resulting from existing livestock allotments has been analyzed, mitigated, and exempted. The additional standards and guidelines would further reduce the potential for conflicts on HNF lands in the PCA and zone 1. We do not anticipate additional adverse effects (beyond what was analyzed in our 2014 BO) from the proposed action associated with livestock allotments.

Vegetation Management

The HNF's existing Forest Plan contains direction pertaining to vegetation management in grizzly bear habitat, but the proposed action will add additional desired conditions and guidelines. The added direction is similar to the Interagency Grizzly Bear Guidelines (IGBC, 1986) in encouraging a mosaic of successional stages; placing spatial and temporal restrictions on logging activities; designing projects to maintain or improve grizzly bear habitat; and retaining cover as needed along grass/forb/shrub openings, riparian wildlife habitat, or wetlands. Direction that will be implemented in the HNF's amended Forest Plan are presented in Appendix 2 under *Terrestrial Ecosystems Vegetation*. The desired conditions in the HNF's amended Forest Plan (NCDE-DC-VEG-01 & 02) maintain that vegetation management activities are conducted while providing habitat that contributes to a sustainable and increasing NCDE grizzly bear population.

The vegetation management guidelines and desired conditions in the HNF's amended Forest Plan would continue to provide diverse cover and foraging conditions for grizzly bears in the NCDE. The new components would also continue to reduce the potential for disturbance to grizzly bears through the timing of timber sale activities. Vegetation management activities may present short-term effects to individual grizzly bears due to disturbance from increased activities or temporary habitat changes. However, we do not anticipate that these effects will be adverse to grizzly bears.

Mineral and Energy Development

The proposed action will amend the HNF's Forest Plan to include a standard (NCDE-STD-MIN-08) directing that all new leases within the HNF's portion of the PCA contain a "no surface occupancy" stipulation. With a no surface occupancy stipulation, access to oil and gas deposits would require horizontal drilling from outside the boundaries of the no surface occupancy areas. This prevents the loss of grizzly bear habitat through displacement and limits the potential for habituation and conflict with humans. In addition to this standard, the proposed action includes a monitoring component (NCDE-MON-04) that pertains to mineral and energy leases in the PCA and zone 1 (including DCAs). If there is potential for adverse effects to grizzly bears and/or their habitat, NCDE-MON-04 requires the development of a monitoring plan that will be implemented for the life of the mineral activity. Specifically, the monitoring plan must document how effects to bears will be monitored, and must identify appropriate mitigation measures and funding sources for those measures. We expect that components of the proposed action associated with mineral and energy development will not have additional adverse effects on grizzly bears in the NCDE.

Interaction with Yellowstone Grizzly Bears

The proposed action will include an amendment to the HNF's Forest Plan that would add desired condition NCDE-HNF Zone 1-DC-01, which acknowledges the role zone 1 habitat plays in sustaining the NCDE grizzly bear population. This desired condition also recognizes the HNF's position on the landscape with respect to the GYE, and will provide genetic connectivity between the two ecosystems. Standard NCDE-HNF Zone 1-STD-01 would require no net increase above the baseline in density of motorized routes (roads and trails) open to public use during the non-denning season on HNF lands within zone 1.

Desired condition NCDE-HNF Zone 1&2-DC-02 encourages consolidation of NFS lands adjacent to highways, and other efforts that reduce barriers to north-south genetic connectivity of grizzly bear populations in zone 1 and the portion of zone 2 west of Interstate 15 on the HNF.

Under the proposed action, standard NCDE-STD-WL-02 will require establishment of a food storage order(s) across the PCA, zone 1 and zone 2. This would be expected to result in fewer grizzly bear-human conflicts and reduced grizzly bear mortality risk in zone 2. The Beaverhead-Deerlodge National Forest (BDNF) issued a food storage order on June 1, 2014, that covers that entire National Forest and all of the Anaconda-Pintler Wilderness Area, which also will help to protect dispersing bears. The BDNF also has an active bear education program in cooperation with the Southwest Grizzly Bear Education Group. The Forest has also been working to "harden" some developed campsites with bear-resistant containers, and all of the national forests in the Greater Yellowstone Ecosystem are pursuing expanding food storage facilities (e.g., food poles) in dispersed sites. The Bureau of Land Management's Western Montana District has also developed a food storage order that will be applied by the Butte, Missoula, and Dillon Field Offices to provide consistent requirements on adjoining Forest Service and BLM lands.

Proposed amendments to the HNF's Forest Plan is likely to improve habitat conditions for grizzly bears in zones 1 and 2. These efforts, in conjunction with the efforts from other forests

and agencies, will further help to support genetic exchange between the NCDE and Greater Yellowstone Ecosystem.

### *Lewis and Clark National Forest Plan*

Motorized Route Density and Secure Core Inside the PCA

As with the other Amendment Forests, the LCNF's Forest Plan will be amended to include standards that would establish consistent definitions and procedures for managing administrative use (NCDE-STD-AR-01) and short-term public use (NCDE-STD-AR-04). This would not constitute a change in how the LCNF Forest Plan is currently being implemented. However, the proposed amendments would ensure a set of standards and guidelines that is consistent among National Forests within the action area.

Under the proposed action standard NCDE-STD-AR-02 would be added to the LCNF's Forest Plan. This standard would require no net increase from the baseline for OMRD and TMRD, and no net decrease from the baseline for the percent of secure core on Forest land within bear management subunits in the PCA. This standard has an associated monitoring component (NCDE-MON-01) that requires the Forest Service to monitor OMRD, TMRD, and secure core in each bear management subunit and compare conditions to the baseline. The results of this monitoring are to be reported biennially.

As discussed in the *Description of the Proposed Action* section, newly implemented Forest Plan direction considers "baseline" to be a subunit's access conditions as of December 31, 2011, or as modified by changes evaluated through the separate section 7 consultation with the Service. In contrast to past methodologies, the secure core definition used in the proposed action does not include high use non-motorized trails (discussed further below). Baseline conditions are presented above in Table 10.

The proposed action will also amend the LCNF's Forest Plan to include a standard that will allow temporary changes in OMRD, TMRD, and secure core during project activities (NCDE-STD-AR-03). The standard will allow projects to temporarily increase OMRD by five percent, temporarily increase TMRD by three percent, and temporarily decrease secure core by two percent. Changes in motorized access conditions will be measured using a ten year running average, and will be compared against the baseline as defined above (see Appendix 2 for this procedure and a hypothetical example).

Newly implemented guidelines in the LCNFs amended Forest Plan also provide direction that on-the-ground project implementation should not exceed 5 years (NCDE-GDL-AR-01). Following project completion, guideline NCDE-GDL-AR-02 would require secure core, OMRD, and TMRD to return to pre-project levels within one year of completion of the project.

As discussed previously, the temporary changes that will be allowed under the LCNF's amended Forest Plan were derived from analysis and ESA section 7 consultations on six timber harvest and road management projects. These projects affected 18 bear management subunits within the

NCDE (USFWS 2013c), and were conducted between 2003 and 2010, a period during which the NCDE grizzly bear population is known to have been stable to increasing (Kendall et al. 2009; Mace and Roberts 2012). Thus, we anticipate that these allowances will not impair the ability for the LCNF to support a stable and increasing NCDE grizzly bear population.

The standard would increase the potential for disturbance of grizzly bears to occur, but on the LCNF this would be strongly constrained because the subunits' overlap with designated wilderness and inventoried roadless areas. The LCNF contains nearly 716,000 acres of secure core habitat. Of this, approximately 694,000 acres (97 percent) are in wilderness or inventoried roadless areas, meaning that only about 3 percent of the LCNF's secure core habitat occurs in areas that even allow any road access (Figure 1-7). Further, the Rocky Mountain Front Heritage Act described above will continue to limit construction and use of temporary roads. Although allowance of temporary changes in access conditions could adversely affect grizzly bears through increased disturbance, the extent of area on the LCNF that could be affected is limited. As a result, we do not expect these changes to the LCNF Forest Plan to prevent the subunits on the LCNF to promote sustainability of the NCDE grizzly bear population.

Motorized Route Density in Zone 1, 2 and 3

The LCNF contains only negligible amounts of land in zones 1 and 2 of the action area (6 and 2 acres respectively), but it does contain more than 972,000 acres of land within zone 3 of the action area. Grizzly bears may occur on LCNF lands designated as zone 3, including the Little Belt and Highwood Mountains (see Figure 1-2). While grizzly bears may occur in these areas, there are no records indicating that bears are continually occupying these portions of the LCNF. However, occupancy may occur in the future given the documented growth in size and distribution of the NCDE population. Elk management guidelines in the existing LCNF Forest Plan will be carried forward in the proposed action and will likely continue to reduce the mortality risk for any grizzly bears that occasionally use zone 3.

Motorized route densities in zone 3 on the LCNF may be adversely affecting individual grizzly bears, but adverse effects on grizzly bears in these areas would not have negative effects on the status of the NCDE grizzly bear population since they occur outside the NCDE recovery zone/PCA. Grizzly bear recovery zones were established to identify areas necessary for recovery of the species, and are the areas in each ecosystem within which the criteria for recovery are measured. As stated in the Grizzly Bear Recovery Plan (USFWS 1993), the NCDE recovery zone (i.e., PCA) is adequate for managing and promoting the recovery of the NCDE grizzly bear population. As a result, we conclude that adverse effects to individual grizzly bears in zone 3 will not preclude recovery of the NCDE grizzly bear population because these impacts occur outside the NCDE recovery zone/PCA. The effects to grizzly bears in these areas will be further analyzed in the section 7 consultation on the combined Helena-Lewis and Clark National Forest's Revised Forest Plan, which is expected to occur within the next one to two years.

Motorized Over-Snow Use During Den Emergence

Motorized over-snow use in grizzly bear denning habitat on the LCNF is not permitted after March 31. This direction will be carried forward in the LCNF's amended Forest Plan, and will continue to ensure that motorized over-snow vehicles do not impact grizzly bears emerging from their dens. Further, the proposed action will amend the LCNF's Forest Plan to include standard NCDE-STD-AR-08. This standard would not allow any increase above the baseline in the acreage of areas and miles of routes designated for over-snow vehicle use in the PCA during the den emergence (i.e., late spring) time period. This amendment would be no change from the current situation, but it would help to ensure that impacts, particularly to females with cubs, would not increase in the future. We do not anticipate that this amendment will result in additional adverse effects to grizzly bears.

High Use Non-Motorized Trails Inside the PCA

The rationale for eliminating high use non-motorized trails from consideration was discussed in the Helena National Forest Section above. Within the LCNF's portion of the PCA, there is a total of 681,204 acres of secure core habitat when calculated with high use non-motorized trails. When calculated without high use non-motorized trails, that total increases to a total of 715,836 acres. This increase is largely due to the mainline access trails that lead into the Bob Marshall Wilderness, which were previously considers "high use." Table 11 in the *Environmental Baseline* section of this document shows how this change in definition will be reflected in each of the LCNF's grizzly bear subunits. By excluding high use non-motorized trails from the calculation, the PCA (as a whole) on the LCNF will go from 88% to 92% secure core habitat.

Developed Recreation Sites

The proposed action will amend the LCNF's Forest Plan to include several components that address developed recreation sites designed and managed for overnight use. These components are being proposed in an effort to reduce the potential for grizzly bear conflicts with humans. Within the PCA, desired condition NCDE-DC-AR-02 indicates that the number, capacity, and improvements of developed recreation sites on the LCNF would provide for both user comfort and safety, while minimizing the risk of grizzly bear–human conflicts. Desired condition NCDE-DC-AR-03 states that increases in the number and capacity of developed recreation sites managed for overnight use during the non-denning season (e.g., campgrounds, cabin rentals, huts, guest lodges, recreation residences) would be at levels that contribute to a stable and increasing grizzly bear population in the NCDE.

The LCNF's Forest Plan will be also be amended to include standards and guidelines pertinent to developed recreation sites and grizzly bears. Guideline NCDE-GDL-AR-03 states that if the number or capacity of day use or overnight developed recreation sites is increased within PCA, the project should include measures to reduce the risk of grizzly-bear human conflicts in that BMU (e.g., public education, installation of food-hanging poles/bear-resistant storage devices, increased law enforcement). Within the PCA, standard NCDE-STD-AR-05 would set a limit of one increase in the number or the overnight capacity of developed recreation sites designed and managed for overnight use per BMU per decade. This standard has an associated monitoring

component (NCDE-MON-02) that requires monitoring of the developed recreation sites in each bear management unit and compare conditions to the baseline. The results of this monitoring are to be reported biennially.

Standard NCDE-STD-AR-07 would require that new or reauthorized ski area permits include mitigation measures to reduce the risk of grizzly bear-human conflicts. Similar to temporary changes in secure core and route density, these standards were based on what has occurred in the NCDE through ESA section 7 consultation during the time period when the grizzly bear population was stable to increasing.

Although there may be an increased risk of grizzly bear-human conflicts as a result of increases in developed recreation sites with overnight use in the future, the risk of mortality to grizzly bears would be limited under the proposed action through the measures stated above. Implementation and monitoring of food storage orders, public education, and increases in the availability of bear-resistant food storage devices will also help to reduce the number of grizzly bear-human conflicts on the LCNF.

An increase in developed recreation during the non-denning season may represent adverse effects to grizzly bears in the NCDE. However, the effects of such increases are difficult to consider at this time. While the proposed action will limit the volume and rate of increase (1 site per BMU per decade), new developed recreation sites may occur in variety of manners. For example, the effects of installing a new developed recreation site near valuable grizzly bear habitat (e.g., riparian areas, meadows) will likely be much different than the effect of increasing the capacity of an already heavily used campground.

Future increases in developed recreation during site available for use during the non-denning season will undergo a separate section 7 consultation. Given the difficulty in forecasting details associated with these increases, we have determined that it would be more appropriate to assess potential adverse effects to grizzly bears during project-specific consultation.

Livestock Allotments

The proposed action will retain existing LCNF Forest Plan standards and guidelines relevant to livestock allotments in grizzly bear habitat. However, the proposed action also includes amending the LCNF's Forest Plan to include new components meant to further reduce the effect of livestock allotments on grizzly bears. New standards would require that new or reauthorized grazing permits, and temporary grazing permits for small livestock, that occur within the PCA and zone 1, incorporate measures to reduce the risk of grizzly bear-human conflicts (NCDE-STD-GRZ-01 & 06). The proposed amendments would also prohibit an increase in the number of cattle allotments (NCDE-STD-GRZ-05), or in the number of sheep allotments or permitted sheep animal unit months (NCDE-STD-GRZ-02 and NCDE-STD-GRZ-04), in the PCA. These standards have an associated monitoring component (NCDE-MON-03) that requires monitoring of the number of livestock allotments and sheep animal unit months in each bear management subunit within the PCA. Results of the monitoring will be compared to baseline conditions. Furthermore, NCDE-MON-10 requires monitoring of all grizzly bear-livestock conflicts that

may occur on NFS lands in the PCA and zone 1. The results of these monitoring efforts will be reported biennially. Under the amended Forest Plan, all livestock carcasses in the PCA and zone 1 must be reported within 24 hours (NCDE-STD-GRZ-03).

Livestock allotments on the LCNF are not anticipated to displace grizzly bears or negatively impact important bear food production areas. The LCNF has no sheep allotments, no recent history of conflicts, and no known grizzly bear mortalities associated with livestock grazing. Thus, the mortality risk associated with livestock grazing on the LCNF will remain very low even after the proposed action is implemented. We do not foresee any additional adverse effects on grizzly bears.

Vegetation Management

The LCNF's existing Forest Plan contains direction pertaining to vegetation management in the grizzly bear habitat. The proposed action will add additional desired conditions and guidelines that are similar to the Interagency Grizzly Bear Guidelines (IGBC 1986) in encouraging a mosaic of successional stages; placing spatial and temporal restrictions on logging activities; designing projects to maintain or improve grizzly bear habitat; and retaining cover as needed along grass/forb/shrub openings, riparian wildlife habitat, or wetlands. The desired conditions and guidelines that will be added to the LCNF's amended Forest Plan are presented in Appendix 2 under *Terrestrial Ecosystems Vegetation*.

The vegetation management guidelines and desired conditions in the LCNF's amended Forest Plan would continue to provide diverse cover and foraging conditions for grizzly bears in the NCDE. The new components would also continue to reduce the potential for disturbance to grizzly bears through the timing of timber sale activities. Vegetation management activities may present short-term effects to individual grizzly bears due to disturbance from increased activities or temporary habitat changes. However, we do not anticipate that these effects will be adverse to grizzly bears.

Mineral and Energy Development

The existing LCNF Forest Plan contains direction pertaining to mineral and energy development in grizzly bear habitat (*see LCNF subsection in Environmental Baseline*). This direction will be carried forward in the amended Forest Plan and additional desired conditions, standards, and guidelines applicable to the PCA would be added as shown in Appendix 3. The additional standards and guidelines would apply to new or reauthorized permits, leases, or plans of operation. They would provide guidance for mitigation of mineral development impacts, proper storage and handling of grizzly bear attractants, and implement timing restrictions for ground-disturbing activities in spring habitat and seismic activity in denning habitat. Management of motorized traffic and helicopter use, noise reduction, and worker safety when living/working in grizzly bear habitat would also be addressed under the amended Forest Plan components. Continued implementation of the food storage order in the PCA would minimize the potential for grizzly bear-human conflicts and bear mortality.

The proposed action will amend the LCNF's Forest Plan to include a standard (NCDE-STD-MIN-08) directing that all new leases within the PCA contain a no surface occupancy stipulation. With a no surface occupancy stipulation, access to oil and gas deposits would require horizontal drilling from outside the boundaries of the no surface occupancy areas. This prevents the loss of grizzly bear habitat through displacement and limits the potential for habituation and conflict with humans. In addition to this standard, the proposed action includes a monitoring component (NCDE-MON-04) that pertains to mineral and energy leases in the PCA and zone 1 (including DCAs). If there is potential for adverse effects to grizzly bears and/or their habitat, NCDE-MON-04 requires the development of a monitoring plan that will be implemented for the life of the mineral activity. Specifically, the monitoring plan must document how effects to bears will be monitored, and identify appropriate mitigation measures and funding sources for those measures. Thus, we anticipate that components of the proposed action associated with mineral and energy development will not result in additional adverse effects on grizzly bears.

***Kootenai National Forest Plan***

As discussed in the KNF subsection in the *Environmental Baseline* section, the KNF has recently (2015) revised its Forest Plan.

Motorized Route Density and Secure Core Inside the PCA

Under the proposed action, desired condition NCDE-DC-AR-01 would be added to the KNF's Forest Plan. This desired condition states that management of OMRD, TMRD and secure core will be done so in a manner that contributes to a stable and increasing NCDE grizzly bear population. The proposed action will also amend the KNF's Forest Plan to include standards establishing consistent definitions and procedures for managing administrative use (NCDE-STD-AR-01) and short-term public use (NCDE-STD-AR-04). These new elements would not constitute a change in how the KNF Forest Plan is currently being implemented, but they will ensure that standards and guidelines are consistent among National Forests within the action area.

The KNF Forest Plan will be amended to include standard NCDE-STD-AR-02. This standard would require no net increase from the baseline (as defined in the draft NCDE grizzly bear conservation strategy) OMRD or TMRD within bear management subunits in the PCA. The standard also requires no net decrease from the baseline for the amount of secure core in bear management subunits in the PCA. This standard has an associated monitoring component (NCDE-MON-01) that requires the Forest Service to monitor OMRD, TMRD, and secure core in each bear management subunit and compare conditions to the baseline. The results of this monitoring are to be reported biennially.

As discussed in the *Description of the Proposed Action* section, newly implemented Forest Plan direction considers "baseline" to be a subunit's access conditions as of December 31, 2011, or as modified by changes evaluated through the separate section 7 consultation with the Service. In contrast to past methodologies, the secure core definition used in the proposed action does not

include high use non-motorized trails (discussed further below). Baseline conditions are presented above in Table 12.

Proposed KNF Forest Plan amendments will allow projects to temporarily alter motorized route densities and/or secure core habitat in the PCA. NCDE-STD-AR-03 would allow temporary changes in the OMRD, TMRD and secure core within bear management subunits relative to baseline conditions (as described above). This standard would permit up to a five percent increase in OMRD, three percent increase in TMRD, and two percent decrease in secure core. These temporary changes would be calculated using a 10-year running average for each grizzly bear subunit (see Appendix 2 for calculation protocols and a hypothetical example). Allowable deviations to access condition within the PCA were derived from assessing six project-level section 7 consultations done elsewhere in the NCDE (Flathead and Lolo NFs). These projects resulted in temporary changes to motorized route densities and secure core in 18 grizzly bear subunits, but all occurred during a period of time when the NCDE grizzly bear population was stable to increasing (i.e., 2005-2010). Since these temporary changes occurred within many grizzly bear subunits in the NCDE while the population continued to grow, we do not anticipate that amending the KNF's Forest Plan to include standard NCDE-STD-AR-03 will prevent the KNF from supporting a sustained NCDE grizzly bear population.

As discussed in Section E.5 (*Environmental Baseline*), existing conditions in the Therriault subunit are adversely affecting individual grizzly bears due to OMRD. These adverse effects were analyzed during in the KNF Revised Forest Plan consultation (USFWS 2013). As such, incidental take of grizzly bears resulting from access condition within the PCA has already been analyzed, mitigated and exempted.

In relation to NCDE-STD-AR-03, the proposed action will amend the KNF Forest Plan to include a guideline that state pre-project conditions would generally be restored within 1 year of project completion (NCDE-GDL-AR-02). Further, guideline NCDE-GDL-AR-01 states that on-the-ground project implementation should not exceed five years. Incorporation of these guidelines ensures that management direction consistent the KNFs Forest Plan will continue to provide grizzly bear habitat on the KNF that contributes to a sustainable NCDE population.

In the past, there have been very few instances of temporary use of restricted roads, and that would likely continue to be the case on the KNF. NCDE secure core habitat within the KNF has significant overlap with a wilderness study area, recommended wilderness, inventoried roadless areas, and other management area designations that restrict road development. The KNF has approximately 82,400 acres of secure core in the NCDE, of which nearly 74,000 acres (90 percent) is in one of the designations presented above. The means that only ten percent of secure core habitat on the KNF occurs in areas eligible for road use and/or construction (see Figure 1-8 in Appendix 1). Although allowance of temporary changes in access conditions could adversely affect grizzly bears through increased disturbance, the extent of area on the KNF that could be affected is limited. As a result, we do not expect these proposed amendments to the KNF Forest Plan to prevent a stable or increasing NCDE grizzly bear population.

Motorized Route Density in Salish DCA, Zones 1, 2 and 3

The Tobacco BORZ largely overlaps with NCDE zone 1 and the Salish demographic connectivity area, although the boundaries do not perfectly align (Figure 1-9). Existing KNF Forest Plan direction protects grizzly bear habitat in both zone 1 and the Salish DCA. This includes management direction that does not allow an increase in permanent linear miles of open or total roads within the Tobacco BORZ. Under the proposed action, this standard would be carried forward and would be designated as NCDE-KNF Zone 1-STD-01. The standard would not allow an increase in permanent linear miles of open roads, total roads, or motorized trails within the Tobacco BORZ polygon. The small portion of zone 1 and the Salish DCA that is outside the Tobacco BORZ area would be managed according to existing forest plan direction (NCDE-KNF Zone 1-STD-02). Further, the proposed amendments include a monitoring component NCDE-MON-08, which states that permanent linear miles of open roads, total roads, and motorized trails will be monitored and compared to the baseline on all KNF lands designated as zone 1. The results of this monitoring effort will be documented in a biennial report.

We anticipate that linear route densities in the Salish DCA and zone 1 would continue to have adverse effects to individual grizzly bears. While existing route densities in the Salish DCA may be adversely affecting individual grizzly bears, it will remain at a level known to support occupancy by females (2.0 mi/mi2; Boulanger and Stenhouse 2014). The adverse effects of existing linear road densities in the Salish DCA and zone 1 were addressed in 2015 when the KNF underwent consultation on a Revised Forest Plan (USFWS 2013). The proposed action will amend the KNF Forest Plan (i.e., standard NCDE-KNF Zone 1-STD-AR-01), but will continue to implement restrictions on linear road miles in these areas outside the PCA. Incorporation of this standard will maintain consistency across the several BORZ areas on the KNF, and will encouraging female occupancy in this area. We anticipate amending the KNF's Forest Plan to include direction pertaining to the Salish DCA and zone1 will will not result in any additional adverse effects on grizzly bears. Further we do not anticipate these amendments will prevent the KNF from supporting a sustainable NCDE grizzly bear population.

Motorized Over-Snow Use During Den Emergence

Under the proposed action, NCDE-STD-AR-08 would require no net increase in the percentage of area or miles of routes that are designated for motorized over-snow vehicle use within modeled grizzly bear denning habitat. This restriction would pertain to KNF lands within the PCA during the den emergence (i.e., late spring) time period. The primary concern during the den emergence period is that disturbance from motorized over-snow vehicles may negatively affect the survival of cubs by pushing grizzly bears off important post-denning habitats.

Amending the KNF's Forest Plan to include this standard would prevent increases in the extent of late-season motorized over-snow use and the potential impacts to grizzly bears. The potential for adverse effects on a female grizzly bear with cubs due to the existing late-season motorized over-snow vehicle use remains. However, these on-going effects were analyzed in 2015 when the KNF consulted with the Service on a Revised Forest Plan. We don't anticipate any

additional adverse effects to grizzly bears from proposed amendments associated with late season over-snow vehicle use.

High Use Non-Motorized Trails Inside the PCA

The rationale for eliminating high use non-motorized trails from consideration was discussed in the Helena National Forest Section above. The KNF contains 82,438 acres of secure core habitat in the PCA. As presented in the KNF subsection of the *Environmental Baseline* section, there are no high use non-motorized trails on the KNF. Thus, this proposed amendment will not change the baseline conditions already reported in this document.

Developed Recreation Sites

Under the proposed action, several plan components would be added to the KNF's Forest Plan that address developed recreation sites designed and managed for overnight use. Standard NCDE-STD-AR-05 would allow no more than one increase in the number or capacity of developed recreation sites that are designed and managed for overnight use during the non-denning season per BMU per decade. This would limit the potential for future grizzly bear-human conflicts associated with habituation or food conditioning associated with developed recreation sites. This standard has an associated monitoring component (NCDE-MON-02) that requires monitoring of the developed recreation sites in each bear management unit and compare conditions to the baseline. The results of this monitoring are to be reported biennially.

Standard NCDE-STD-AR-07 would require that new or reauthorized ski area permits include mitigation measures to reduce the risk of grizzly bear-human conflicts. Guideline NCDE-GDL-AR-03 states that, if the number or capacity of day use or overnight developed recreation sites is increased within the PCA, the project should include measures to reduce the risk of grizzly-bear human conflicts in that BMU. Potential examples of these measures include providing the public with additional information/education, installing food-hanging poles or bear-resistant storage devices, and increasing law enforcement and patrol efforts. This set of proposed plan components was derived in an effort to remain consistent with what has regularly occurred through consultation during the time period when the NCDE grizzly bear population was stable to increasing.

By allowing future increases in the number or capacity of developed recreation sites with overnight use, there is a potential for adverse effects on individual bears, in particular an increased risk of mortality. However, the above-described direction reduces the likelihood of habituation or food-conditioning of bears at developed recreation sites. Implementation and monitoring of the food storage orders, public education, and increases in the availability of bear-resistant food storage devices will also continue to help reduce the number of grizzly bear-human conflicts on the KNF.

An increase in developed recreation during the non-denning season may represent adverse effects to grizzly bears in the NCDE. However, the effects of such increases are difficult to consider at this time. While the proposed action will limit the volume and rate of increase (1 site per BMU per decade), new developed recreation sites may occur in variety of manners. For

example, the effects of installing a new developed recreation site near valuable grizzly bear habitat (e.g., riparian areas, meadows) will likely be much different than the effect of increasing the capacity of an already heavily used campground.

Future increases in developed recreation sites available for use during the non-denning season will undergo a separate section 7 consultation. Given the difficulty in forecasting details associated with these increases, we have determined that it would be more appropriate to assess potential adverse effects to grizzly bears during project-specific consultation.

Livestock Allotments

The KNF's existing Forest Plan contains direction aimed at reducing the impact of livestock allotments on grizzly bears. The proposed action will carry this direction forward, and will include new components meant to further reduce the effect of livestock allotments on grizzly bears. New standards would require that new or reauthorized grazing permits, and temporary grazing permits for small livestock, that occur within the PCA and zone 1, incorporate measures to reduce the risk of grizzly bear-human conflicts (NCDE-STD-GRZ-01 & 06). The proposed amendments would also prohibit an increase in the number of cattle allotments (NCDE-STD-GRZ-05), or in the number of sheep allotments or permitted sheep animal unit months (NCDE-STD-GRZ-02 and NCDE-STD-GRZ-04), in the PCA. These standards have an associated monitoring component (NCDE-MON-03) that requires monitoring of the number of livestock allotments and sheep animal unit months in each bear management subunit within the PCA, and compare conditions to the baseline. Furthermore, NCDE-MON-10 requires monitoring of all grizzly bear-livestock conflicts that may occur on NFS lands in the PCA and zone 1. The results of these monitoring efforts will be reported biennially. Under the amended Forest Plan, all livestock carcasses in the PCA and zone 1 must be reported within 24 hours (NCDE-STD-GRZ-03).

Under the existing Forest Plan, the mortality risk associated with livestock allotments on the KNF is low. This is largely based on the few acres subject to livestock grazing in the PCA, and the lack of history of grizzly bear-livestock conflicts. The additional standards and guidelines resulting from the proposed action would further reduce the potential for conflicts on KNF lands in the action area. Given these factors, we anticipate that the proposed amendments associated with livestock allotments on the KNF will not result in additional adverse effects to grizzly bears.

Vegetation Management

The KNF's existing Forest Plan contains direction pertaining to vegetation management in the grizzly bear habitat. The proposed action will add additional desired conditions and guidelines that are similar to the Interagency Grizzly Bear Guidelines (IGBC 1986) in encouraging a mosaic of successional stages; placing spatial and temporal restrictions on logging activities; designing projects to maintain or improve grizzly bear habitat; and retaining cover as needed along grass/forb/shrub openings, riparian wildlife habitat, or wetlands. The desired conditions and guidelines that will be added to the KNFs Forest Plan are presented in Appendix 2 under *Terrestrial Ecosystems Vegetation*.

The vegetation management guidelines and desired conditions in the KNF's amended Forest Plan would continue to provide diverse cover and foraging conditions for grizzly bears in the NCDE. The new components would also continue to reduce the potential for disturbance to grizzly bears through the timing of timber sale activities. Vegetation management activities may present short-term effects to individual grizzly bears due to disturbance from increased activities or temporary habitat changes. However, we do not anticipate that these effects will be adverse to grizzly bears.

Mineral and Energy Development

The proposed action includes amending the KNF Forest Plan to include a number of standards and guidelines meant to reduce the impact of mining and energy development on NCDE grizzly bears. The amended Forest Plan will require that new or reauthorized permits, leases, or plans of operation in the PCA and zone 1 include a provision for modification or temporary cessation of activities, if needed, to resolve a grizzly bear-human conflict situation (NCDE-STD-MIN-02). Additionally, the amended KNF Forest Plan would include standards that would require the following: measures for mitigation of mineral development impacts (NCDE-STD-MIN-03); proper storage and handling of wildlife attractants (NCDE-STD-MIN-04); mitigation measures or stipulations such as timing restrictions for ground-disturbing activities in spring habitat and seismic activity in denning habitat (NCDE-STD-MIN-05); mitigation measures if needed regarding motorized access, such as management of motorized traffic, helicopter use, noise reduction (NCDE-STD-MIN-06); and worker safety training for employees living and working in grizzly bear habitat (NCDE-STD-MIN-07).

In addition to the measures described above, the proposed action will amend the KNF Forest Plan to include NCDE-STD-MIN-08. This standard would require that new leases for minerals and/or energy development in the PCA include a no surface occupancy stipulation. With a no surface occupancy stipulation, access to oil and gas deposits would require horizontal drilling from outside the boundaries of the no surface occupancy areas. This prevents the loss of grizzly bear habitat through displacement and limits the potential for habituation and conflict with humans. In addition to this standard, the proposed action includes a monitoring component (NCDE-MON-04) that pertains to mineral and energy leases in the PCA and zone 1 (including DCAs). If there is potential for adverse effects to grizzly bears and/or their habitat, NCDE-MON-04 requires the development of a monitoring plan that will be implemented for the life of the mineral activity. Specifically, the monitoring plan must document how effects to bears will be monitored, and identify appropriate mitigation measures and funding sources for those measures. As a result, we anticipate that effects of the proposed action associated with mineral and energy development on grizzly bears will be insignificant.

Interaction with Cabinet-Yaak Grizzly Bears

Our *Environmental Baseline* discussion on the KNF indicated that the KNF's location relative to grizzly bear ecosystems represents a unique opportunity to provide both genetic connectivity between two ecosystems (CYE and NCDE), and for the NCDE to serve as a "source population" for the much smaller CYE. These goals led to the designation of the Salish DCA, and direction

included in the proposed action seeks to facilitate female occupancy in the region. The amendments to the KNF's Forest Plan that will provide for these conditions were largely discussed in the *Motorized Route Density in Salish DCA, Zones 1, 2 and 3* sub-section. Thus, we anticipate that the proposed action will maintain, or improve, the ability of the KNF support interaction between grizzly bears in the NCDE and CYE.

***Lolo National Forest Plan***

Motorized Route Density and Secure Core Inside the PCA

The proposed action would amend the LNF Forest Plan to include desired condition NCDE-DC-AR-01, which states that OMRD, TMRD, and secure core maintained at levels that contribute to a stable to increasing grizzly bear population in the NCDE. Implementation of standard NCDE-STD-AR-02 would require no net increase from the baseline in OMRD and TMRD, and no net decrease from the baseline in the percent of secure core within bear management subunits in the PCA. This standard has an associated monitoring component (NCDE-MON-01) that requires the Forest Service to monitor OMRD, TMRD and secure core in each bear management subunit and compare conditions to the baseline. The results of this monitoring are to be reported biennially.

As discussed in the *Description of the Proposed Action* section, newly implemented Forest Plan direction considers "baseline" to be a subunit's access conditions as of December 31, 2011, or as modified by changes evaluated through the separate section 7 consultation with the Service. Baseline conditions are presented above in Table 13.

As with the three other Amendment Forests, temporary changes to access conditions (i.e., OMRD, TMRD and core) during project activities would be allowed under NCDE-STD-AR-03. Temporary changes will be limited to a five percent increase in OMRD, three percent increase in TMRD, and a two percent decrease in secure core. Changes in motorized access conditions in each grizzly bear subunit will be measured using a ten year running average, and will be compared against the baseline (see Appendix 2 for calculation protocols and a hypothetical example). Following project completion, guideline NCDE-GDL-AR-02 would require secure core, OMRD and TMRD to return to pre-project levels within one year of completion of the project, and NCDE-GDL-AR-01 states that on-the-ground implementation of projects should not exceed five years.

As discussed previously, the temporary changes that will be allowed under the LNF's amended Forest Plan were derived from analysis and ESA section 7 consultations on six timber harvest and road management projects. These projects affected 18 bear management subunits within the NCDE (USFWS 2013c), and were conducted between 2003 and 2010, a period during which the NCDE grizzly bear population is known to have been stable to increasing (Kendall et al. 2009; Mace and Roberts 2012). Thus, we anticipate that these allowances will not impair the ability for the LCNF to support a stable to increasing NCDE grizzly bear population.

Temporary increases in open and total motorized route densities and temporary decreases in secure core under standard NCDE-STD-AR-03 could result in displacement of grizzly bears.

However, the amount of grizzly bear habitat that could be affected is strongly constrained by the overlap with designated wilderness, inventoried roadless areas, and other forest plan management area designations that restrict road development. There are approximately 221,000 acres of secure core habitat on the LNF. Of this total, about 211,000 acres (96 percent) are in wilderness and inventoried roadless areas. This means that only 4 percent of the LNF's secure core habitat occurs in areas where road access would be possible (Figure 1-10).

Although much of the LNF's grizzly bear habitat is under a designation that provides additional protection (e.g., wilderness), both the Swan and Mission Mountain subunits have high road densities. As discussed in Section E.2 (*Environmental Baseline*), the Mission subunit contains less than 75 percent NFS lands and is managed under a no net loss strategy. Since conditions in this subunit are largely due to private activity, adverse effects associated with existing conditions were not analyzed during past section 7 consultation. The Swan subunit is greater than 75 percent NFS lands and the existing conditions are likely presenting adverse effects to grizzly bears. Existing conditions in the Swan subunit are adversely affecting individual grizzly bears due to OMRD, TMRD and secure core. These adverse effects were analyzed during a 2011 consultation (USFWS 2016a). As such, incidental take of grizzly bears resulting from access condition within the Swan subunit has already been analyzed, mitigated and exempted.

Other standards would establish consistent definitions and procedures for managing administrative use (NCDE-STD-AR-01) and short-term public use (NCDE-STD-AR-04) in the PCA. This would not constitute a change in how the forest plan is currently being implemented; however, a consistent set of standards and guidelines would be formalized in the LNF Forest Plan rather than being requirements of a biological opinion and incidental take statement.

The newly implemented LNF Forest Plan components associated with the proposed action are intended to limit OMRD and TMRD, and to maintain sufficient secure core in the PCA. These limits will continue to support occupancy and a stable to increasing NCDE grizzly bear population. Some adverse effects to grizzly bears in the Swan and Mission Mountain bear management subunits will likely continue from existing access conditions. Additionally, adverse effects from short-term displacement may also occur as a result of temporary road use in the PCA. The risks of grizzly bear-human conflicts and grizzly bear mortality may increase, but levels are expected to remain low on LNF lands within the PCA.

Although allowance of temporary changes in access conditions could adversely affect grizzly bears through increased displacement, the extent of area on the LNF that could be affected is limited. As a result, we do not expect these changes to the LNF Forest Plan to prevent the subunits on the LNF from promoting sustainability of the NCDE grizzly bear population.

<u>Motorized Route Density in the Ninemile DCA, Zones 1, 2 and 3</u>

The proposed action will add two desired conditions to the LNF's Forest Plan. NCDE-LNF Zone 1-DC-01 states that roads located within the LNF portion of NCDE zone 1 (including the Ninemile DCA) will provide for public and administrative access to NFS lands while contributing to sustaining the grizzly bear population in the NCDE. This desired condition also

indicates that the Ninemile DCA will provide habitat that can be used by female grizzly bears, and allow for movement between grizzly bear ecosystems. NCDE-LNF Zone 1-DC-02 encourages consolidation of NFS lands and conservation easements with willing landowners in the areas between the PCA and the Ninemile DCA to provide habitat connectivity and facilitate movement of wildlife.

In addition to desired conditions, the proposed action will amend the LNF Forest Plan to include standards pertaining to grizzly bears in the Ninemile DCA and zone 1. NCDE-LNF Zone 1-STD-01 addresses the density of roads/motorized routes open to public motorized use. Within the Ninemile DCA, the standard indicates there shall be no net increase above the baseline in the density of roads and trails open to public motorized use during the non-denning season. Within the LNF's portion of NCDE zone 1 (outside the Ninemile DCA), there shall be no net increase above the baseline in the density of roads open to public motorized use during the non-denning season. The proposed action will also amend the LNFs Forest Plan to include a monitoring component associated with this standard. NCDE-MON-10 states that within the Ninemile DCA, the density of motorized roads and trails open to the public during the non-denning season will be monitored and compared to baseline conditions. The component also states that within zone 1 outside of the Ninemile DCA, the density of roads open to the public during the non-denning season will be monitored. The results of these monitoring efforts will be presented in a biennial report.

As presented in the *Environmental Baseline* section of this biological opinion, linear road densities within the Ninemile DCA may be adversely affecting individual grizzly bears, but are at levels know to support occupancy by female grizzly bears (2.0 mi/mi$^2$; Boulanger and Stenhouse 2014). These adverse effects were analyzed in 2012 when the LNF consulted with the Service on access management both inside and outside the PCA. The proposed action will implement new Forest Plan components that would limit the disturbance, displacement, and mortality risk associated with roads in zone 1 and with motorized routes (roads and trails) in the Ninemile DCA. We do not anticipate that implementation of these plan components will have additional adverse effects to grizzly bears. Further, we anticipate that these components will be effective in sustaining female grizzly bear occupancy, eventually encouraging demographic connectivity with the Bitterroot recovery zone.

Motorized Over-Snow Use During Den Emergence

The existing LNF Forest Plan does not restrict over-snow vehicle use during the den emergence period. Under the proposed action, NCDE-STD-AR-08 would be added to the Forest Plan to limit the impact of motorized over-snow vehicles during this period when female bears with cubs are vulnerable to disturbance. The standard would allow no net increase in the percentage of area or miles of routes that are designated for motorized over-snow vehicle use within modeled grizzly bear denning habitat in the LNF's portion of the PCA during the den emergence time period. We anticipate that implementation of this standard would prevent future increases in impacts to female bears during this period.

High Use Non-Motorized Trails Inside the PCA

The rationale for eliminating high use non-motorized trails from consideration was discussed in the Helena National Forest Section above. Within the LNF's portion of the PCA, there is a total of 209,865 acres of secure core habitat when calculated with high use non-motorized trails. When calculated without high use non-motorized trails, that total increases to 220,991 acres. Table 14 in the *Environmental Baseline* section of this document shows how this change in definition will be reflected in each of the LNF's grizzly bear subunits. By excluding high use non-motorized trails from the calculation, the PCA (as a whole) on the LNF will go from 78% to 82% secure core habitat.

Developed Recreation Sites

Under the proposed action, the LNF's Forest Plan will be amended to add several components addressing developed recreation sites designed and managed for overnight use. The amended Forest Plan will include a desired condition (NCDE-DC-AR-02) that indicates the number, capacity, and improvements of developed recreation sites will provide for user comfort and safety while minimizing the risk of grizzly bear–human conflicts on LNF lands within the PCA. Desired condition NCDE-DC-AR-03 states that the number and capacity of developed recreation sites designed and managed for overnight use during the non-denning season will remain at levels that contribute to sustaining the recovery of the grizzly bear population in the NCDE.

The proposed action will also amend the LNF's Forest Plan to include standards and guidelines designed to implement the desired conditions presented above. Guideline NCDE-GDL-AR-03 states that if the number or capacity of day use or overnight developed recreation sites is increased in the PCA, the project should include measures to reduce the risk of grizzly-bear human conflicts in that BMU. These measures can include additional public information and education, installation of food-hanging poles or bear-resistant food and garbage storage devices, or an increase in law enforcement presence.

Standard NCDE-STD-AR-05 would set a limit of one increase in the number or the overnight capacity of developed recreation sites designed and managed for overnight use per BMU per decade on NFS lands within the PCA. This standard has an associated monitoring component (NCDE-MON-02) that requires monitoring of the developed recreation sites in each bear management unit and compare conditions to the baseline. The results of this monitoring are to be reported biennially. Further, standard NCDE-STD-AR-07 would require that new or reauthorized ski area permits include mitigation measures to reduce the risk of grizzly bear-human conflicts.

These proposed plan components may result in adverse effect to grizzly bears by increasing the likelihood of conflict with humans. However, they were developed to be consistent with what has occurred in the NCDE through project-specific section 7 consultation while the NCDE grizzly bear population was stable to increasing. Although there may be an increased risk of grizzly bear-human conflicts as a result of some increase in developed recreation sites with overnight use in the future, the risk of mortality to grizzly bears would be limited under the

proposed action through the measures stated above. Implementation and monitoring of existing food storage orders, public education, and increases in the availability of bear-resistant food storage devices will also help to reduce the number of grizzly bear-human conflicts on the LNF.

An increase in developed recreation during the non-denning season may represent adverse effects to grizzly bears in the NCDE. However, the effects of such increases are difficult to consider at this time. While the proposed action will limit the volume and rate of increase (1 site per BMU per decade), new developed recreation sites may occur in variety of manners. For example, the effects of installing a new developed recreation site near valuable grizzly bear habitat (e.g., riparian areas, meadows) will likely be much different than the effect of increasing the capacity of an already heavily used campground.

Future increases in developed recreation during site available for use during the non-denning season will undergo a separate section 7 consultation. Given the difficulty in forecasting details associated with these increases, we have determined that it would be more appropriate to assess potential adverse effects to grizzly bears during project-specific consultation.

Livestock Allotments

The proposed action will retain existing LNF Forest Plan standards and guidelines relevant to livestock allotments in grizzly bear habitat. However, the proposed action also includes amending the LNF's Forest Plan to include new components meant to further reduce the effect of livestock allotments on grizzly bears. New standards would require that new or reauthorized grazing permits, and temporary grazing permits for small livestock, that occur within the PCA and zone 1, incorporate measures to reduce the risk of grizzly bear-human conflicts (NCDE-STD-GRZ-01 & 06). The proposed amendments would also prohibit an increase in the number of cattle allotments (NCDE-STD-GRZ-05), or in the number of sheep allotments or permitted sheep animal unit months (NCDE-STD-GRZ-02 and NCDE-STD-GRZ-04), in the PCA. These standards have an associated monitoring component (NCDE-MON-03) that requires monitoring of the number of livestock allotments and sheep animal unit months in each bear management subunit within the PCA, and comparison of conditions to the baseline. Furthermore, NCDE-MON-10 requires monitoring of all grizzly bear-livestock conflicts that may occur on NFS lands in the PCA and zone 1. The results of these monitoring efforts will be reported biennially. Under the amended Forest Plan, all livestock carcasses in the PCA and zone 1 must be reported within 24 hours (NCDE-STD-GRZ-03).

Livestock allotments on the LNF are not anticipated to result in grizzly bear-livestock conflicts, , or negatively impact important bear food production areas. The LNF only has one cattle grazing allotment within the PCA, and no sheep allotments. Further, the LNF has no recent history of conflicts, and no known grizzly bear mortalities associated with livestock grazing. Thus, we do not anticipate additional adverse effects to grizzly bears from livestock grazing and the proposed amendments associated with livestock allotments on the LNF.

Vegetation Management

The LNF's existing Forest Plan contains direction pertaining to vegetation management in the grizzly bear habitat. The proposed action will add additional desired conditions and guidelines that will be applicable to the LNF's portion of the PCA. The direction in these plan elements is similar to the Interagency Grizzly Bear Guidelines (IGBC 1986) in that they encourage the following: a mosaic of successional stages; placing spatial and temporal restrictions on logging activities; designing projects to maintain or improve grizzly bear habitat; and retaining cover as needed along grass/forb/shrub openings, riparian wildlife habitat, or wetlands. The desired conditions and guidelines that will be added to the LCNF's amended Forest Plan are presented in Appendix 2 under *Terrestrial Ecosystems Vegetation*.

The vegetation management guidelines and desired conditions in the LNF's amended Forest Plan would continue to provide diverse cover and foraging conditions for grizzly bears in the NCDE. Carrying forward direction from the existing LNF Forest Plan will continue to provide the same guidance that was in place when NCDE grizzly bears were stable to increasing. The new components would also continue to reduce the potential for disturbance to grizzly bears through the timing of timber sale activities. Vegetation management activities may present short-term effects to individual grizzly bears due to disturbance from increased activities or temporary habitat changes. However, we do not anticipate that these effects will be adverse to grizzly bears.

Mineral and Energy Development

The existing LNF Forest Plan contains direction pertaining to mineral and energy development in grizzly bear habitat (see LNF subsection in *Environmental Baseline*). This direction will be carried forward in the amended Forest Plan and additional desired conditions, standards, and guidelines applicable to the PCA and zone 1 (including Ninemile DCA) would be added as shown in Appendix 3. The additional standards and guidelines would apply to new or reauthorized permits, leases, or plans of operation. They would provide guidance for mitigation of mineral development impacts, proper storage and handling of grizzly bear attractants, and implement timing restrictions for ground-disturbing activities in spring habitat and seismic activity in denning habitat. Management of motorized traffic and helicopter use, noise reduction, and worker safety when living/working in grizzly bear habitat would also be addressed under the amended Forest Plan components. A stipulation for no surface occupancy would be required for any new or reauthorized leases in the primary conservation area. Continued implementation of the food storage order in the primary conservation area would minimize the potential for grizzly bear-human conflicts and bear mortality.

The proposed action will amend the LNF's Forest Plan to include a standard (NCDE-STD-MIN-08) directing that all new leases within the PCA contain a no surface occupancy stipulation. With a no surface occupancy stipulation, access to oil and gas deposits would require horizontal drilling from outside the boundaries of the no surface occupancy areas. This prevents the loss of grizzly bear habitat through displacement and limits the potential for habituation and conflict with humans. In addition to this standard, the proposed action includes a monitoring component (NCDE-MON-04) that pertains to mineral and energy leases in the PCA and zone 1 (including

DCAs). If there is potential for adverse effects to grizzly bears and/or their habitat, NCDE-MON-04 requires the development of a monitoring plan that will be implemented for the life of the mineral activity. Specifically, the monitoring plan must document how effects to bears will be monitored, and identify appropriate mitigation measures and funding sources for those measures. We anticipate that proposed amendments associated with mineral and energy development on the LNF will additional adverse effects to grizzly bears.

Interaction with Cabinet-Yaak Grizzly Bears

Our *Environmental Baseline* discussion indicated that the LNF contains lands pertinent to multiple grizzly bear ecosystems (i.e., NCDE, CYE and BE). These lands provide an opportunity for the NCDE to serve as a source population for much small ecosystems (CYE), or ecosystems that are yet to be occupied by grizzly bears (BE). Further, these lands facilitate future genetic exchange among grizzly bear ecosystems, potentially resulting in a more robust population of grizzly bears in the lower United States.

These goals led to the designation of the Ninemile DCA, and direction included in the proposed action seeks to facilitate female occupancy in the region. The amendments to the LNF's Forest Plan that will provide for these conditions were largely discussed in the *Motorized Route Density in Salish DCA, Zones 1, 2 and 3* sub-section. Thus, we anticipate that the proposed action will maintain, or improve, the ability of the LNF support interaction between grizzly bears in the NCDE, CYE and BE.

### 3. Species' Response to the Proposed Action

As discussed in the forest-specific sections within Section F.2 (*Effects Specific to the Action*), the proposed action will maintain existing conditions in certain circumstances that are adversely affecting individual grizzly bears. These adverse effects associated with existing conditions have been analyzed during past consultations between the USFS and the Service. As such, incidental take resulting from existing conditions has already been analyzed, mitigated and exempted. However, the proposed action does include forest plan components that will result in additional adverse effects to individual grizzly bears beyond what has been previously analyzed. These adverse effects to individual grizzly bears will occur from temporary increases in OMRD and TMRD, and temporary decreases in secure core as allowed by proposed Forest Plan Amendments. These changes will result in temporary access conditions in some subunits that may adversely affect individual grizzly bears, but the extent of the adverse effects will be limited base on what is allowable under the proposed Forest Plan Amendments. Further, these allowable changes in OMRD, TMRD and secure core will be consistent with project-specific changes that occurred within the NCDE recovery zone during a time when the NCDE grizzly bear population was known to be increasing in size and distribution.

Regarding the Interagency Grizzly Bear Guidelines: The proposed action would remove specific reference to the Interagency Grizzly Bear Guidelines, including the delineation of management situations, from the existing Forest Plans. However, much of the existing forest plan

management direction that is based on the Interagency Grizzly Bear Guidelines would be retained. Additional desired conditions, standards, guidelines, and monitoring items would be added. Appendix 2 provides a complete list of all standards, guidelines and desired conditions that will be adopted as part of the proposed action. Additionally, Appendix 3 presents a direct comparison of current Forest Plan management direction and amended Forest Plan direction.

The NCDE grizzly bear population is robust and growing. The most recent population data indicate that the NCDE population is greater than 1,000 grizzly bears and is growing at a rate of more than two percent annually (Costello et al. 2016). As discussed throughout this document, a draft NCDE Grizzly Bear Conservation Strategy has been created by an interagency team consisting of representatives from the U.S. Fish and Wildlife Service, National Park Service, U.S. Forest Service, U.S. Geological Service, Montana Department of Fish, Wildlife and Parks, Montana Department of Natural Resources and Conservation, Bureau of Land Management, the Confederated Salish and Kootenai Tribes, and the Blackfeet Nation. Members of this team are considered the leading experts on grizzly bears in the NCDE. The draft strategy was developed by combining grizzly bear knowledge and expertise with the best available scientific research relative to grizzly bear conservation and management.

The proposed action will replace and/or supplement existing Forest Plan direction related to grizzly bears with desired conditions, guidelines and standards that are consistent with elements of the draft NCDE Grizzly Bear Conservation Strategy. This will lead to management approaches on the Amendment Forests that will contribute to a stable and expanding population of grizzly bears, as evidenced by the population status and trend under these conditions to date. Thus, the proposed action is expected to maintain high levels of grizzly bear survival within the action area.

Adopting the direction that is informed by the draft NCDE Grizzly Bear Conservation Strategy into the proposed amendments would limit new motorized access routes, developed recreation sites, late-season motorized over-snow vehicles, livestock grazing allotments and mineral/energy development within the NCDE PCA on NFS lands. Some of these parameters would not exceed the 2011 baseline levels (as described in the BA and this biological opinion). Others will follow a trend similar to what was happening during the time when the NCDE grizzly bear population was growing and expanding its distribution across the landscape (i.e., 2004 to 2011). While these conditions may present a low level of adverse effects to NCDE grizzly bears, evidence suggests that management of NFS lands in accordance with the proposed Forest Plan amendments will support a sustainable and increasing NCDE grizzly bear population.

## G. CUMMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Future activities will occur on non-federal land within the action area. Such activities could include residential and recreational development and use, timber harvest, fuel reduction around private developments, livestock grazing, and other actions. However, at this time, specific future actions being considered or proposed on non-federal land that could have cumulative effects with the proposed action are not known. To some degree, motorized routes, developed sites, and livestock grazing on private lands (where known) were incorporated into the 2011 baseline figures for grizzly bear habitat measures in the draft NCDE conservation strategy. However, future motorized route construction and use, increases in developed sites, and changes in livestock management on private land do not count against the habitat standards imposed.

While future non-federal actions are difficult to anticipate, these effects may be limited due to the large extent of federally-administered lands in the NCDE recovery zone/PCA. The action area (i.e., NFS lands administered by one of the four Amendment Forests) contains approximately 1.3 million acres within the PCA. An additional 3.1 million acres is administered by other federal agencies not associated with this biological opinion (i.e., Flathead NF, Glacier National Park). In total, 78.6 percent of the NCDE recovery zone/PCA is administered by a federal entity. As such, actions on these areas would be subject to separate section 7 analysis. The remaining acres occur on other land ownerships including state (4.2 percent), tribal (7 percent) and private lands (9.2 percent). Note that one percent of the recovery zone/PCA is comprised of large water bodies (e.g., Flathead Lake).

While some activities on non-federal land may contribute to cumulative effects at the project level at some point in the future, the large extent of the PCA under NFS and large blocks of wilderness within which human access is restricted by regulation and topography would serve to reduce the impacts of larger residential human populations on grizzly bears. While federal land management cannot entirely compensate for impacts on private land, management under the amended Forest Plans would continue to provide high quality habitat for grizzly bears on NFS lands within the NCDE.

Since the proposed action involves programmatic amendments to Forest Plans (i.e. provides direction for future actions that may be authorized, funded, and/or carried out by the Forest) it does not in itself mandate or approve future implementation of activities on the any of the Amendment Forests. Therefore, any future projects proposed and designed to implement the amended Forest Plans would undergo separate consultation related to the effects of listed species. Any site-specific information on future activities that will occur on non-federal land that might contribute to cumulative effects would be considered at that time.

## H. CONCLUSION

After reviewing the current status of the grizzly bear, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the effects of the proposed Forest Plan amendments are not likely to jeopardize the continued existence of the grizzly bear. No critical habitat has been designated for this species therefore none will be affected. Regulations implementing section 7 of the Act define

"jeopardize the continued existence of" as: "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Our conclusion that implementation of the proposed Forest Plan amendments would not jeopardize the continued existence of grizzly bears is based on the literature and information referenced in this document, the information in the biological assessment prepared for the Forest Plan amendments (USFS 2017), meetings and discussions with USFS, discussions with grizzly bear experts, and information in our files. The *Effects of the Action* section analyzed and summarized key factors in detail.

The Service's section 7 handbook explains that adverse effects on individuals of a species generally do not result in jeopardy determinations unless that loss when added to the environmental baseline, is likely to result in an appreciable reduction of the likelihood of both survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. In our analysis for grizzly bears, we first conduct such an analysis relevant to the NCDE grizzly bear population, and then determine the impact of the proposed action on the species.

Implementation of the proposed amendments may result in adverse effects to individual grizzly bears over the life of the plans, particularly as a result of access management including temporary reductions in secure core habitat and increases in open and total motorized route densities. These effects are likely to be greatest in grizzly bear subunits that do not meet recommended open and total route densities and/or secure core percentages. Individual subunits not meeting these conditions were discussed in detail by National Forest in the *Environmental Baseline* section of this document. Although the proposed action provides direction that allows temporary changes in access conditions in a subunit, future projects that will result in these changes will still undergo project level analysis. The process will ensure that a site-specific analysis of effects will occur if a project is proposed within the PCA.

Based on the best available scientific information reviewed in this consultation, adverse effects on grizzly bears as a result of the proposed action will not negatively impact the recovery of the NCDE grizzly bear population. Further, we expect that direction in the proposed Forest Plan amendments will result in conditions that support grizzly bear use of NFS lands in the NCDE. It is our opinion that the proposed action would not appreciably reduce the likelihood of both the survival and recovery of the NCDE grizzly bears. Below we summarize key factors related to the effects of the proposed amendment on grizzly bears as detailed and analyzed in this biological opinion and our rationale for this non-jeopardy conclusion.

**Factors related to the proposed amendments:**

- The proposed amendments would replace or supplement existing direction related to grizzly bears with direction that is informed by the draft NCDE Grizzly Bear Conservation Strategy.

- The proposed amendments would implement direction consistent with the draft NCDE Grizzly Bear Conservation Strategy. This direction was developed by an interagency team of grizzly bear experts using the best available scientific data.

- Because the draft NCDE Grizzly Bear Conservation Strategy was created to provide direction which will lead to a sustainable and recovered NCDE population, we anticipate that amending the Forest Plans to include this direction will maintain high levels of grizzly bear survival within the action area.

- Under the proposed action, existing Forest Plan language and certain terms and conditions will be superseded by new plan components. This update will ensure that desired conditions, standards and guidelines are consistent among all National Forests that manage lands within the NCDE.

- The proposed amendments will require no net increase above baseline conditions (see definition above) in OMRD or TMRD in each bear management subunit within the PCA.

- The proposed amendments will require no net decrease below baseline conditions (see definition above) in percent secure core in each bear management subunit within the PCA.

- In each bear management subunit, the proposed amendments would allow no more than a five percent temporary increase in OMRD, a three percent temporary increase in TMRD, and a two percent temporary decrease in secure core. These temporary changes would be calculated using a 10-year running average for each grizzly bear subunit. Allowable deviations to access condition within the PCA are consistent with project-level section 7 consultations done elsewhere in the NCDE. These projects resulted in temporary changes to motorized route densities and secure core in 18 grizzly bear subunits, but all occurred during a period of time when the NCDE grizzly bear population was growing (2004 to 2011).

- The proposed amendments would allow no more than one increase in the number or capacity of developed recreation sites that are designed and managed for overnight use (e.g., campgrounds, cabin rentals, huts, guest lodges, recreation residences) during the non-denning season per BMU per decade. This rate of increase is consistent with increases during a time period (2004 to 2011) when the NCDE grizzly bear population was increasing in numbers and distribution.

- The proposed amendments require no net increase above baseline conditions in cattle or sheep grazing allotments on NFS lands within the PCA.

- The proposed amendments require no net increase above baseline conditions in the percentage of area, or miles of routes, open to motorized over-snow use in denning habitat during the den-emergence period within the PCA.

- The proposed amendments require that any new mineral and/or energy leases on NFS lands within the PCA include a no surface occupancy stipulation.

- Ten monitoring amendments are included in the proposed action. These amendments require biennial reporting of habitat conditions within the action area.

- The best available science indicates that conditions in 2011 (i.e., the baseline) provided adequate habitat conditions inside the NCDE recovery zone/PCA to support a stable to increasing grizzly bear population.

- The effect on grizzly bears from many of the proposed amendments is expected to be neutral to insignificant and/or discountable. Much of the existing direction related to grizzly bears is already covered under a variety of existing laws, policy, and direction in other areas of the Forest Plans. The documented growth in the NCDE grizzly bear population while there directions have been in place is an indicator that this direction is effectively contributing to the continued recovery of the population. The proposed action will retain these management directions, but make them consistent across the NCDE.

- The majority of the 25 bear management subunits on the Amendment Forests currently meet the research thresholds for OMRD (< 19 percent with > 1 mi/mi$^2$), TMRD (< 19 percent with > 2 mi/mi$^2$), and secure core (> 68 percent), providing excellent quality and availability of habitat for grizzly bears, including females with cubs.

- Three subunits that have more than 75 percent NFS lands—Red Mountain, Thierrault, and Swan—do not meet one or more of the research thresholds presented above. The Mission, Deep Creek, Heart Butte, and Pine Butte subunits, which have less than 75 percent NFS lands, also do not meet one or more of the thresholds. The proposed amendments would incorporate direction to maintain baseline levels in these subunits, which would allow adverse effects to individual bears to continue. These subunits are a small portion of the action area and temporary changes in access conditions will be limited in magnitude and duration. While some adverse effects to individual grizzly bears may occur, they are not expected to have an effect on the survival and recovery of the NCDE population. This is evidenced by updated research documenting that the population is stable to increasing in both size and distribution.

- The proposed action will maintain habitat connectivity and linkage areas for movement of grizzly bears between recovery zones. This will be accomplished through desired conditions, guidelines and standards that will provide large, remote areas with low levels of human disturbance that contribute to movement between ecosystems, as well as female occupancy in DCAs. This will facilitate genetic exchange between ecosystems, as well demographic exchange by allowing the NCDE to serve as a “source” population for smaller ecosystems (CYE) or ecosystems that are not yet occupied (BE). Connectivity

among ecosystems will support a more robust grizzly bear population in the lower U.S. as a whole.

- Finally, amending the HNF, LCNF, KNF and LNF Forest Plans is a framework programmatic action. This proposed action does not authorize, fund, or carry out an action but provides direction for future actions that may be authorized, funded, or carried out by the USFS. Therefore, any action subsequently authorized, funded, or carried out under the Forest Plan, including direction in the proposed amendment, will be addressed in subsequent section 7 consultations, as appropriate.

**Factors related to the NCDE grizzly bear population:**

- In 1993, the Grizzly Bear Recovery Plan articulated the conservation needs for the recovery of grizzly bears. The plan stated that recovery zones include areas large enough and of sufficient habitat quality to support recovered grizzly bear populations, and that although grizzly bears are expected to reside in areas outside the recovery zones, only habitat within the recovery zone is needed for management primarily for grizzly bears.

- The Recovery Plan strategy has been successful and resulted in growth of the NCDE grizzly bear population since listing. Mace et al. (2012) estimated that the NCDE population has surpassed 1,000 individuals, and the most recent data from Costello et al. (2016) indicate that the population is continuing to grow at a rate of 2.3 percent annually. Based on the best available information, the Service concludes that the status of the NCDE grizzly bear population is robust.

- In addition to increased population size and a positive growth rate, the NCDE grizzly bear population has greatly expanded its distribution on the landscape. Costello et al. (2016) used verified grizzly bear locations to create a current distribution map for the NCDE. This map estimated that grizzly bears occupy an area of about 13.6 million acres, more than double the size of the recovery zone/PCA (5.7 million acres). These data serve to reinforce the Service's conclusion that the NCDE grizzly bear population is robust.

- Efforts to keep human food, garbage, and other attractants unavailable to bears remain intact. Food/wildlife attractant storage orders are in place on all the Amendment Forest lands within the PCA (see *Environmental Baseline* section) and the KNF and LNF have forest-wide food storage orders. Further, food/attractant storage orders are in effect on the Flathead National Forest (issued in 2010 and 2011), and the Beaverhead-Deerlodge National Forest (south of the NCDE; issued in 2014).

- Other federal agencies have also used their authorities to provide for proper storage of food and attractants in an effort to reduce grizzly bear conflicts with humans. Within Glacier National Park, food storage regulations (pursuant to 36 CFR 2.10 (d)) prohibit anyone from leaving food unattended or stored improperly where it could attract or

otherwise be available to wildlife. The National Bison Range complex (administered by the Service) is day-use only, with no overnight camping allowed. Users are expected to pack out their trash; there are no garbage receptacles available anywhere on the refuges. On BLM lands within the NCDE recovery zone, food storage guidelines are incorporated into their contracts. The BLM also incorporates food storage guidelines into contracts in areas that are outside the recovery zone but in areas known to be occupied by grizzly bears

- Montana Fish, Wildlife and Parks' bear specialist program is expected to continue to work with the public to reduce risks to grizzly bears on private and public lands, both inside and outside the boundaries of the recovery zone. In cooperation with other agencies, this program has made notable strides toward an informed public and reduced the availability of attractants to grizzly bears on private and public lands.

- The NCDE encompasses approximately 5.7 million acres (8,926 square miles), of which more than 3.4 million acres (61 percent of the total) are managed by the USFS and nearly 1 million acres (17 percent of the total) are managed by Glacier National Park. Further, nearly 68 percent of all lands within the NCDE PCA are considered "protected." These lands include congressionally designated Wilderness Areas, and other designations that do not allow roads and/or motorized use (e.g., Inventoried Roadless Areas). These areas contain the highest quality grizzly bear habitat and will continue to contribute significantly to reducing the number of human bear encounters and increasing secure for grizzly bears.

Recovery zones were established to identify areas necessary for the recovery of a species and are defined as the area in each grizzly bear ecosystem within which the population and habitat criteria for recovery are measured. The NCDE recovery zone/PCA has been managed to provide and conserve grizzly bear habitat, and best available scientific information indicates this been successful. As anticipated in the Recovery Plan, the NCDE grizzly bear population has responded to these conditions, and has stabilized and increased. In addition, the NCDE grizzly bears have been expanding beyond the PCA and will likely continue to expand into the future. In response, the proposed action provides land management direction to areas outside the original recovery zone/PCA (e.g., DCAs, zone 1) that will facilitate grizzly bear occupancy, especially females with cubs.

The proposed action may result in adverse effects on some individual grizzly bears using the action area now and into the future. However, considering the large size of the NCDE recovery zone, favorable land management direction within the recovery zone/PCA, and the robust status of this grizzly bear population, adverse effects on grizzly bears as a result of implementing the proposed amendments would not have negative effects on the status of the NCDE grizzly bear population. Therefore, we conclude that the proposed action is not reasonably expected to reduce appreciably the likelihood of both the survival and recovery of NCDE grizzly bears.

# I. INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulations pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively without special exemption. "Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined by the Service as an intentional or negligent act or omission that creates the likelihood of injury to listed wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with this Incidental Take Statement.

The measures in an incidental take statement are non-discretionary and must be undertaken by the action agency so that they become binding conditions of any grant or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. The action agency has a continuing duty to regulate the activity that is covered by this incidental take statement. If the action agency (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the action agency must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

## 1. Amount or Extent of Take Anticipated

This biological opinion considered the effects to grizzly bears from implementation direction as guided by the amended Forest Plan elements (desired condition, standards, and guidelines). It includes specific elements for the conservation of grizzly bears and grizzly bear habitat, but does not authorize specific actions. Our analysis of the proposed Forest Plan amendments is a broad-scale examination of the types of projects and activities conducted under the Amendment Forests revised plans that could potentially occur in grizzly bear habitat, and result in effects on grizzly bears. The BA for the proposed amendments contained sufficient specificity to determine that the extent of adverse effects does not rise to levels that are likely to jeopardize grizzly bears.

Each of the Amendment Forests has existing conditions that are adversely affecting grizzly bears. These conditions may be associated with existing road densities and/or secure core in grizzly bear subunits, linear road densities in DCAs or zone 1, late season motorized over-snow vehicle use in denning habitat, livestock allotments, or mineral and energy leases. The on-going adverse effects (and exempted incidental take) associated with these conditions have been

addressed in previous section 7 consultations with the Service, and were detailed in the *Environmental Baseline* or *Effects of the Action* sections of this document.

Our BO considered the effects of increased developed recreation sites on grizzly bears. While we maintain that increases have the potential to adversely affect grizzly bears (primarily through increased risk of conflict with humans), we also discussed how the details in site development and effects to bears can vary. Since this proposed action does not authorize any particular projects, future actions that will affect grizzly bears will be subject to additional section 7 consultation with the Service while the grizzly bear remains listed. We have determined that if increased developed recreation opportunities on any of the Amendment Forests were to result in adverse effects to grizzly bears (while listed), project-specific consultation would be the appropriate time to exempt any such take. As a result, incidental take associated with increased developed recreation will not be discussed further in this incidental take statement.

In this BO, we documented how the proposed action reduces the potential for adverse effects and incidental take to occur as a result of NFS lands management. However, the potential remains for specific projects and activities to result in adverse effects and incidental take of grizzly bears. The mere potential for future take from these actions is not a legitimate basis for providing an exemption for take. While the grizzly bear remains listed, the Amendment Forests remain responsible for section 7 consultation on all future projects (conducted under their amended Forest Plans) that may affect the grizzly bear or its habitat, even if those projects are consistent with the amended Forest Plans.

Although the proposed action is programmatic in nature and does not authorize any specific activity, we are able to ascertain the level of adverse effects that may result from future decisions related to access management and provide surrogate measures of incidental take of grizzly bears. The components of the proposed action associated with incidental take of grizzly bears are discussed below.

***Access Management***

As described in this BO, the effect of roads upon grizzly bear behavior and habitat use has been well documented in the scientific literature. We anticipate that incidental take of grizzly bears is likely to occur in the form of harm and harassment of adult female grizzly bears in roaded areas. Harm and/or harassment will likely occur through displacement and habitat modification/degradation related to roads. Both harm and harassment result in injury to female grizzly bears by significantly disrupting normal behavioral patterns, including breeding, feeding, or sheltering.

Incidental take related to the existing, baseline access condition within the action area has been previously exempted. Existing, baseline conditions that are adversely affecting individual grizzly bears have been previously discussed in detail in Sections E.5 (*Environmental Baseline*) and F.2 (*Effects Specific to the Action*) above. Additionally, the corresponding consultations and biological opinions analyzing the effects of these adverse effects are also discussed and cited in the same sections. Thus, incidental take statements related to the baseline access conditions

within the action area have previously been issued and incidental take related to the baseline will not be discussed further.

In addition, we anticipate incidental take as a result of activity that may occur within secure core habitat. The incidental take we anticipate would be caused by some displacement (i.e. significant underuse) of female grizzly bears from key habitat areas, which may result in decreased fitness that impairs a female's inherent reproductive potential. An adult female grizzly bear may be wary of humans and human-generated disturbance, which may disrupt normal breeding (or more specifically, cub rearing) or feeding patterns. Some females may fail to breed at their potential frequency, or they may fail to complete gestation due to decreased fitness. We do not expect all adult female grizzly bears affected by such displacement to suffer disruptions in normal breeding or feeding patterns, nor would we expect any female to experience permanent effects (lasting more than one reproductive cycle). Variables such as annual climate and resulting habitat and food resource conditions, the level of roading, and the number of grizzly bears using an area may change over time and are all factors influencing the displacement within a home range.

We do not anticipate any take of subadult or male grizzly bears. Male grizzly bears have larger home ranges than females, and males and subadults are more mobile and do not have the same energetic needs as adult females. We also do not anticipate take of grizzly bears that are transient (moving through areas outside of home range use). Such individuals are highly mobile and not restricted to finding food and shelter within a home range. Thus, while displacement may affect behavioral patterns such as feeding or sheltering, we do not anticipate such effects would cause injury to transient, subadult, or male grizzly bears.

Currently, the Service is unaware of scientific or commercial information that could be used to quantify the exact level of incidental take of female grizzly bears as a result of such impacts to or degradation of their habitat, disturbance, or displacement. Reduced reproductive success of females as a result of displacement effects could include grizzly bear cub injury or mortality, but it is more likely to occur through failure to breed or complete gestation. The amount of take is difficult to quantify for the following reasons:

1. The amount of take would depend on the number of adult female grizzly bears impacted by high road densities. We lack specific information on the precise number of adult female grizzly bears that use the action area, but due to the amount of habitat meeting acceptable habitat parameters, we reasonably assume very few adult females would be affected.

2. Individual grizzly bears would react differently to the disturbance. Not all adult female bears that are exposed to disturbances from roaded areas would be adversely impacted to the point of take.

3. Individual female grizzly bears that initially may be sensitive to disturbances may over time become accustomed to the routine disturbances generated by routine forest road use. Therefore, determining the precise amount of take, as defined by impaired reproductive potential, is difficult.

Therefore, as detailed in this BO, the Service anticipates some low level of incidental take of female grizzly bears would occur in the form of harm or harassment from the displacement effects of road densities.

The amount of take would be also difficult to detect for the following reasons:

1. Grizzly bears are not easily detected or observed in the wild.

2. Reproductive rates of individual female grizzly bears vary naturally due to environmental and physiological causes.

3. A reduction in "normal" reproductive success of an individual female is not easily discernible in the wild.

4. The reasons a grizzly bear fails to breed and/or failure to complete gestation are not discernible in the wild.

According to Service policy, as stated in the Endangered Species Consultation Handbook (March 1998) (Handbook), some detectable measure of effect should be provided, such as the relative occurrence of the species or a surrogate species in the local community, or amount of habitat used by the species, to serve as a measure for take. Take also may be expressed as a change in habitat characteristics affecting the species (Handbook, p 4-47 to 4-48). In instances where incidental take is difficult to quantify and/or detect, the Service uses surrogate measures of take.

Here, we use the research benchmark levels of OMRD, TMRD, and secure core as surrogate measures of incidental take within the PCA. The research benchmarks were discussed in detail in previously. In subunits where activity within core results in an increase in road densities higher than benchmark levels for OMRD or TMRD, or a decrease in secure core percent lower than the benchmark levels, we conservatively anticipate some level of impaired habitat use, resulting in impaired breeding or feeding for some adult female grizzly bears.

Based on the best available research and information, we anticipate that some level of incidental take will occur within individual grizzly bear subunits as long as: (1) OMRD exceeds one mile per square mile in more than 19 percent of the subunit; (2) TMRD exceeds two miles per square mile in more than 19 percent of the subunit; and/or (3) the subunit is comprised of less than 68 percent of secure core habitat. Within those subunits achieving the research benchmarks, incidental take of grizzly bears is unlikely to occur.

In each grizzly bear management subunit within the PCA, the proposed action would require no net increase above the baseline in OMRD or TMRD and no net decrease in secure core. The proposed action would allow a temporary five percent increase in OMRD, a temporary three percent increase in TMRD, and a temporary two percent decrease in secure core using a 10-year running average, as was recommended in the draft NCDE Grizzly Bear Conservation Strategy. Using a running average allows the effects of both a project having a greater amount of change within a short duration and a project having lower amount of change with a longer duration to be reflected appropriately. The running average results in a recovery period that is calibrated to the magnitude and duration of the project's temporary effects. Therefore, we use the 10-year running average of OMRD, TMRD and secure core as a surrogate measure of the potential for incidental take within a grizzly bear subunit.

In 7 of the 25 grizzly bear subunits within the action area, one or more of the research benchmarks described above for OMRD, TMRD and secure core are not met under the existing baseline conditions. These subunits are: Red Mountain, Deep Creek, Heart Butte, Pine Butte, Therriault, Mission and Swan (see Tables 7, 10, 12, 13). In these subunits, we anticipate that adverse effects to individual grizzly bears are likely occurring due to current conditions on the landscape. However, the incidental take resulting from existing baseline conditions has already been exempted under previous section 7 consultations. This biological opinion exempts the additional incidental take that may occur as a result of temporary changes in OMRD, TMRD, and/or secure core (as allowed under the proposed action).

Six subunits are close enough to the research benchmarks that temporary changes to OMRD, TMRD or secure core (as allowed under the proposed action) may result in subunit conditions that have temporary adverse effects to individual bears, thus resulting in incidental take of grizzly bears. These subunits are: Alice Creek, Arrastra Mountain, West Fork Beaver, Krinklehorn, Mor-Dun, and Scapegoat (see Tables 7, 10, 12, 13). This incidental take will occur when temporary changes to access condition cause OMRD to exceed one mile per square mile in more than 19 percent of the subunit, TMRD to exceed two miles per square mile in more than 19 percent of the subunit, or secure core to decrease below 68 percent of the subunit. While changes in road density and/or secure core will be temporary, adverse effects and incidental take will occur while these changes are implemented on the ground. Using these surrogate measures of incidental take, the amount of take we anticipated and analyzed here would be exceeded, and reinitiation of consultation, or project-level consultation would be required if access conditions are altered beyond a five percent temporary increase in OMRD, a three percent increase in TMRD, or a two percent decrease in secure core. Calculations for these deviations will be done using a 10 year running average as presented above.

In addition to the above surrogate measures, we use spatial and temporal surrogates for incidental take that will occur in grizzly bear subunits within the PCA. The proposed action indicates that on-the-ground implementation of projects will not occur for more than five years out of any ten year period within any one subunit. Therefore, we use a maximum of five years of on-the-ground project work within a subunit as a surrogate for take. Further, we assume that on-the-ground project implementation will not impact OMRD, TMRD, or secure core in more than

three adjacent grizzly bear subunits. This will provide grizzly bears within a project subunit the opportunity to move away from activities into undisturbed subunits. If on-the-ground project implementation exceeds five years out within a grizzly bear subunit, or if a project impacts OMRD, TMRD, or secure core in more than three adjacent subunits, the level of take exempted under this biological opinion would be exceeded. As a result reinitition of formal consultation, or project-level consultation would be necessary while the grizzly bear remains listed.

### 2. Effects of Take

In the accompanying biological opinion, the Service determined that the level of anticipated take is not likely to result in jeopardy to grizzly bear within the NCDE recovery zone. The best scientific information indicates a robust NCDE grizzly bear population of more than 1,000 individuals. Further, the latest trend data show that the population is growing at a rate of 2.3 percent annually and now occupies an area of roughly 13.6 million acres, more than twice the size of the original NCDE recovery zone (5.7 million acres). Impacts on the grizzly bear population, including anticipated levels of incidental take as a result of the proposed action, will not appreciably reduce survival or the recovery of the species. We anticipate no mortality of adult or subadult grizzly bears, but rather some low level of effect on the normal reproductive potential of a relatively low number of adult female bears inhabiting the Amendment Forests. Critical habitat has not been designated for the grizzly bear, therefore none would be affected.

### 3. Reasonable and Prudent Measures

Biological opinions provide reasonable and prudent measures that are expected to reduce the amount of incidental take. Reasonable and prudent measures are those measures necessary and appropriate to minimize incidental take resulting from proposed actions. Reasonable and prudent measures are nondiscretionary and must be implemented by the agency in order for the exemption in section 7(o)(2) to apply.

1. Minimize or reduce the potential for project-related mortality and displacement of grizzly bears.

### 4. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Forest Service must comply with the following terms and conditions that implement the reasonable and prudent measure described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary:

To implement the reasonable and prudent measure:

1. The Forest Service shall comply with standards NCDE-STD-AR-01, NCDE-STD-AR-02, NCDE-STD-AR-03, NCDE-STD-AR-04, and NCDE-STD-AR-08.

2. The Forest Service shall ensure that projects comply with guidelines NCDE-GDL-AR-01 and NCDE-GDL-AR-02. If projects will be unable to comply with the above guidelines, the Forest Service shall contact the Service immediately to determine further consultation needs.

3. Concurrent, temporary increases in OMRD or TMRD, or concurrent temporary decreases in secure core for projects (*as defined in the glossary for the NCDE*) on NFS lands shall not occur in more than 3 adjacent grizzly bear management subunits on each National Forest.

4. The Forest Service shall continue to implement food/attractant storage and handling programs in the PCA, zone 1 (including the Salish and Ninemile DCAs) and zone 2. This includes ensuring all Forest Service employees and contractors adhere to appropriate protocols, and educating the public on measures to avoid conflicts and/or food conditioning of grizzly bears.

### 5. Reporting Requirements

To remain in compliance with the terms and conditions, and to demonstrate that the USFS is adequately reducing the potential for and minimizing the effect of any incidental take of grizzly bears, the USFS shall adhere to the reporting requirements stipulated in the "Monitoring" components of the proposed amendments. Specifically, these components are presented as NCDE-MON-01 through NCDE-MON-10 in Appendix 2 (page 2-14) of this document. The stipulated biennial monitoring reports shall be provided to the Service's Ecological Services Office in Helena, Montana.

If a human-caused grizzly bear mortality is discovered on NFS lands, the Service's Grizzly Bear Recovery Office in Missoula, Montana shall be notified within 24-hours. Reporting human-caused grizzly bear mortalities on NFS lands may be done by MTFWP, but the USFS remains responsible for ensuring that the Service has received all appropriate information.

### 6. Relationship with Prior Consultations

This biological opinion covers a programmatic action to multiple National Forest Plans. Each forest has undergone previous consultation on their respective Forest Plans, these have been discussed throughout this biological opinion. Previous programmatic biological opinions and their associated incidental take statements will still remain in effect following implementation of the proposed action. This includes the following:

- Biological opinion on the HNF Forest Plan (as amended in 2014)(USFWS 2014)
- Biological opinion on the LCNF Forest Plan (USFWS 1986)
- Biological opinion on the KNF Revised Forest Plan (USFWS 2013)
- Biological opinion on the LNF Forest Plan (as amended in 2004) (USFWS 2004)

In addition to the above consultation done at the Forest Plan level, biological opinions issued for travel plans on some of the Amendment Forests have been discussed above. These biological opinions and their associated incidental take statements will remain in effect. Further, project decisions that were completed prior to implementation of this proposed action will not be changed and are still subject to any project-specific biological opinions and incidental take statements. Projects taking place after the proposed amendments are implemented will be required to be in compliance with this incidental take statement, or go through project-specific consultation if appropriate.

## J. CONSERVATION RECOMMENDATIONS

Sections 7(a)(1) of the Act directs federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans or to develop information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibilities.

During the course of this consultation, the Service noted several elements of the proposed Forest Plan Amendments that will contribute to the conservation of endangered, threatened, proposed, and candidate species. The majority (about 61 percent) of the NCDE PCA occurs on NFS lands. The proposed action will provide habitat conditions on NFS lands that have supported a stable to increasing population of grizzly bears in the NCDE. The amendments will be beneficial to the grizzly bear by requiring food/attractant storage orders on NFS lands, limiting motorized access, limiting new developed recreation sites, limiting new grazing allotments, and requiring a "no surface occupancy" stipulation for new oil and gas leases in the recovery zone/primary conservation area. These and other plan components for minerals, recreation, livestock grazing, lands, and vegetation management activities will ensure that grizzly bear habitat needs are provided for in future site-specific projects. Additional plan components for zones 1 and 2 will be beneficial to the grizzly bear population and support grizzly bear occupancy in areas beyond the recovery zone/PCA. Because the grizzly bear is a wide-ranging species that uses a broad range of elevations and habitats during the year, the actions of other landowners in the NCDE are also very important, particularly with regard

to mortality risk. The ongoing efforts by the USFS to cooperate with other federal, state, local, and tribal agencies and private landowners in the NCDE are also important in supporting coordinated grizzly bear conservation efforts.

This biological opinion identifies the following conservation recommendations that, in addition to the proposed action and other ongoing conservation actions, will support recovery of listed species. As discussed above, these conservation recommendations are discretionary agency activities meant to minimize or avoid adverse effects to listed species. The conservations recommendations are:

1. Continue to maintain, or install, grizzly bear informational signs at major access points that provide the public with the following information: potential grizzly bear presence; proper sanitation/food storage techniques; and distinguishing characteristics between grizzly bears and black bears.

2. Participate in ongoing interagency efforts to identify, map, and manage linkage areas that may be important in providing landscape connectivity within and between grizzly bear ecosystems, across all land ownerships for grizzly bears.

3. Plan and manage development on NFS lands in a manner that facilitates grizzly bear use of key habitats within the PCA and zone 1 (including DCAs).

4. In cooperation with other agencies, identify areas where grizzly bears concentrate during specific time periods to take advantage of concentrated and/or diverse food sources. Where grizzly bear use is known or likely to occur and where practicable, plan activities in a fashion that minimizes displacement of grizzly bears.

5. The USFS continues to plan recreational development, and manage recreational and operational uses to provide for grizzly bear and Canada lynx movement, and to maintain effectiveness of these species' habitats.

6. The USFS continues to identify and prioritize roads for rehabilitation or seasonal restrictions within watersheds with relatively high road densities so as to improve habitat quality and/or security for grizzly bears, Canada lynx, and bull trout, as well as other fish and wildlife species.

In addition to management direction that will contribute to the recovery of grizzly bears, direction relative other listed species (i.e., bull trout, Canada lynx) is also contained in the Amendments Forests' existing Plans. These elements are documented in the biological assessment (USFS 2017), and upon review the Service concludes that these will continue to contribute to the recovery of listed species other than grizzly bears.

Upon review of Forest Plan components that will be carried forward, and components that are being proposed, we conclude that the features of the amended Forest Plans can be considered elements of a program for the conservation of endangered species and threatened species, as described in section 7(a)(1) of the Act. Further, we conclude that this proposed action demonstrates the USFS's commitment to conservation of threatened and endangered species on NFS lands in the action area.

## K. REINITIATION NOTICE

This concludes consultation on the effects of the proposed Forest Plan amendments on grizzly bears. As provided in 50 C.F.R. § 402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (3) a new species is listed or critical habitat designated that may be affected by the action.

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# Appendix 1: Maps

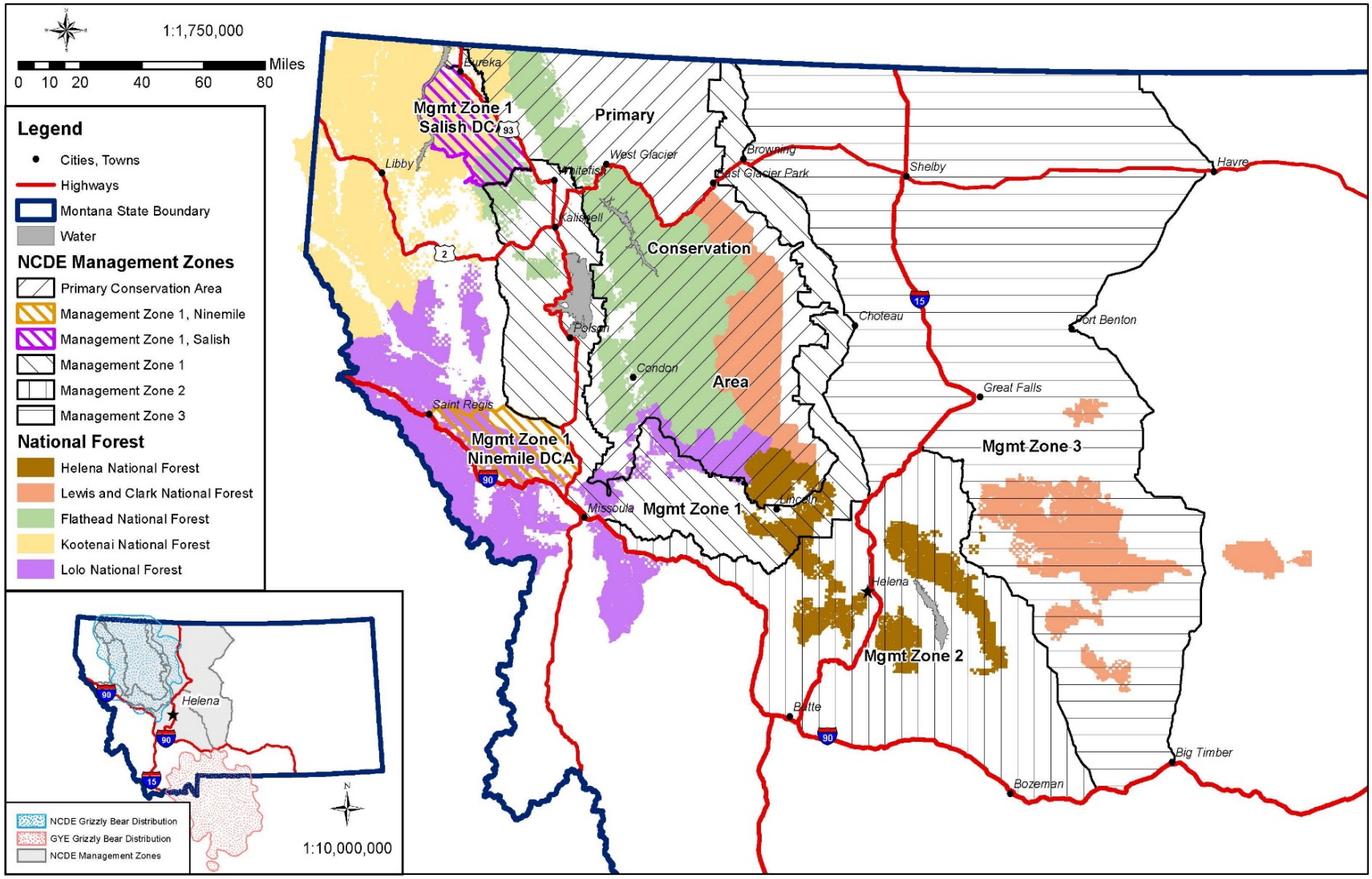


**Figure 1-1. The Northern Continental Divide Ecosystem vicinity map.**

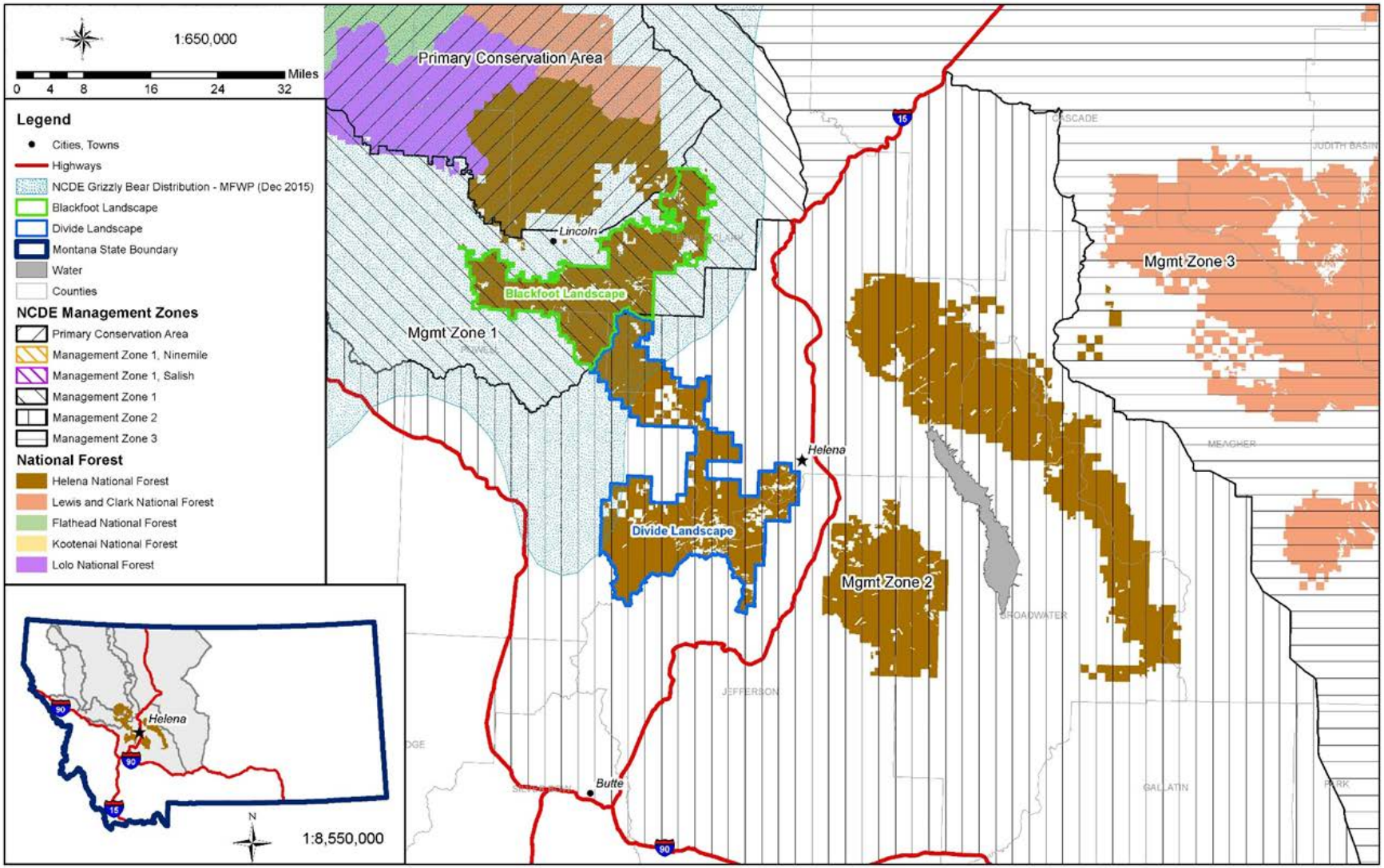


**Figure 1-2. Current grizzly bear distribution in the Blackfoot/Divide landscapes.**

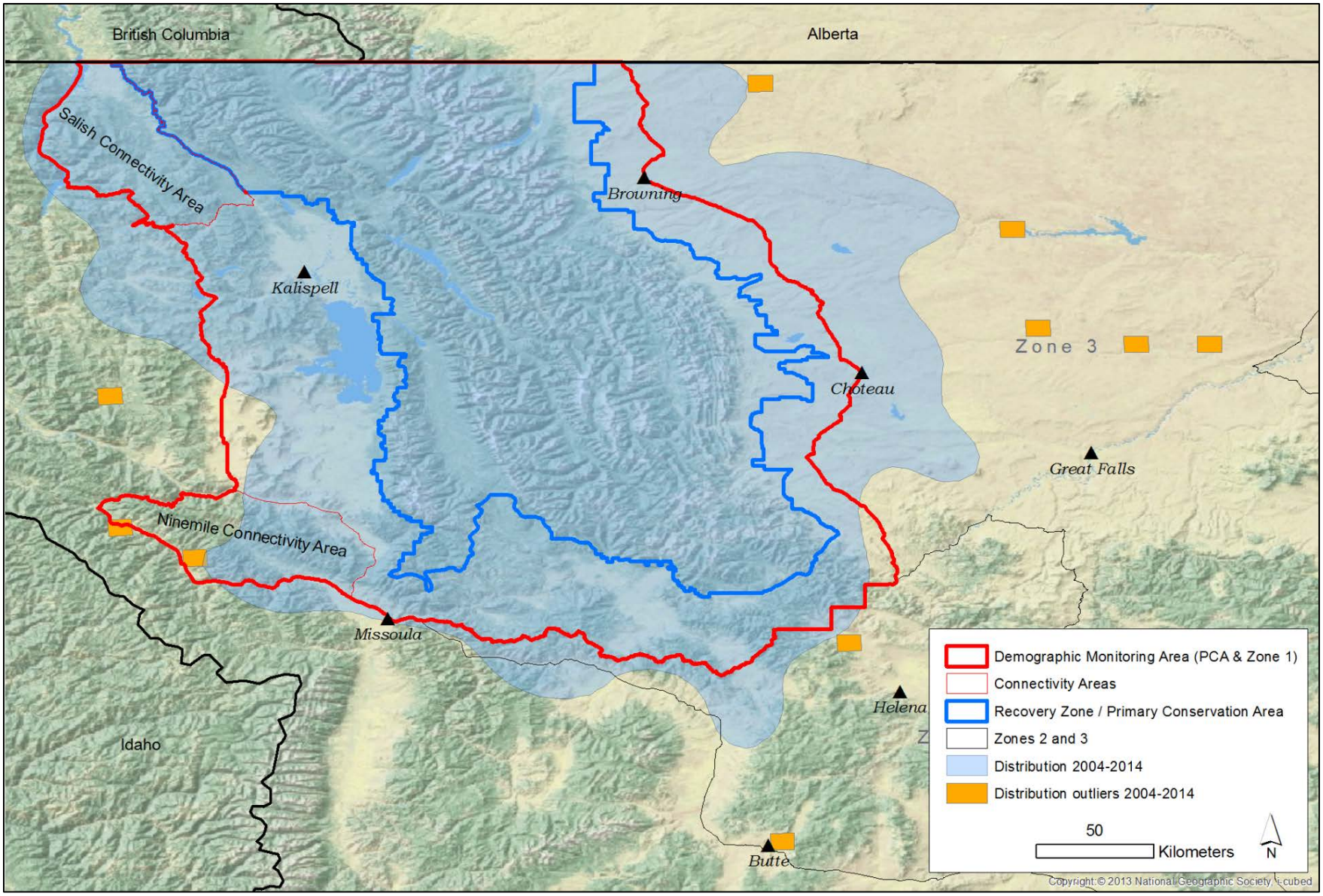


**Figure 1-3. Grizzly bear distribution in the NCDE(2004 to 2014) in relation to NCDE Conservation Strategy Management Zones (Costello et al. 2016).**

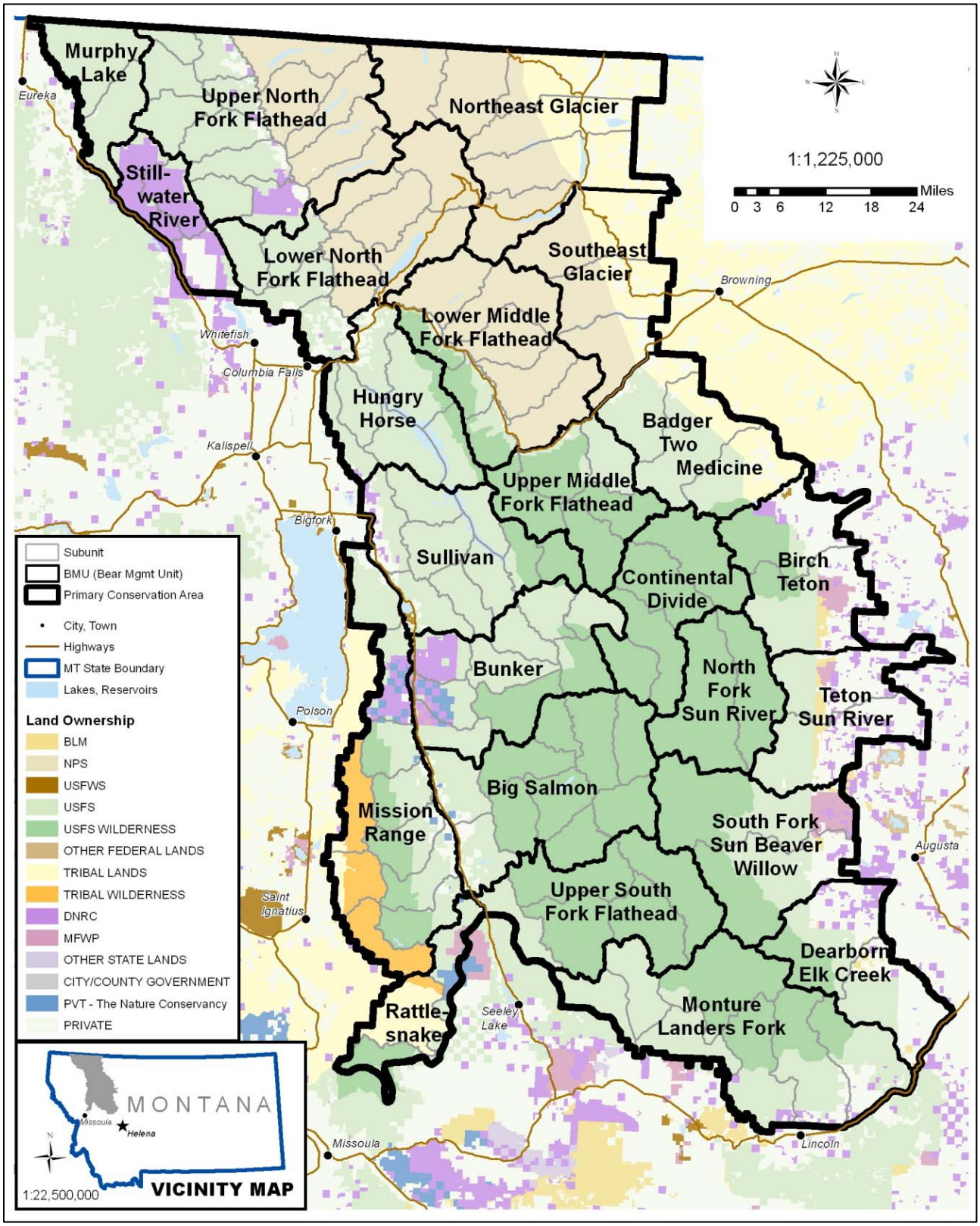


**Figure 1-4. Distribution of the 23 Bear Management Units (BMUs) in the NCDE.**

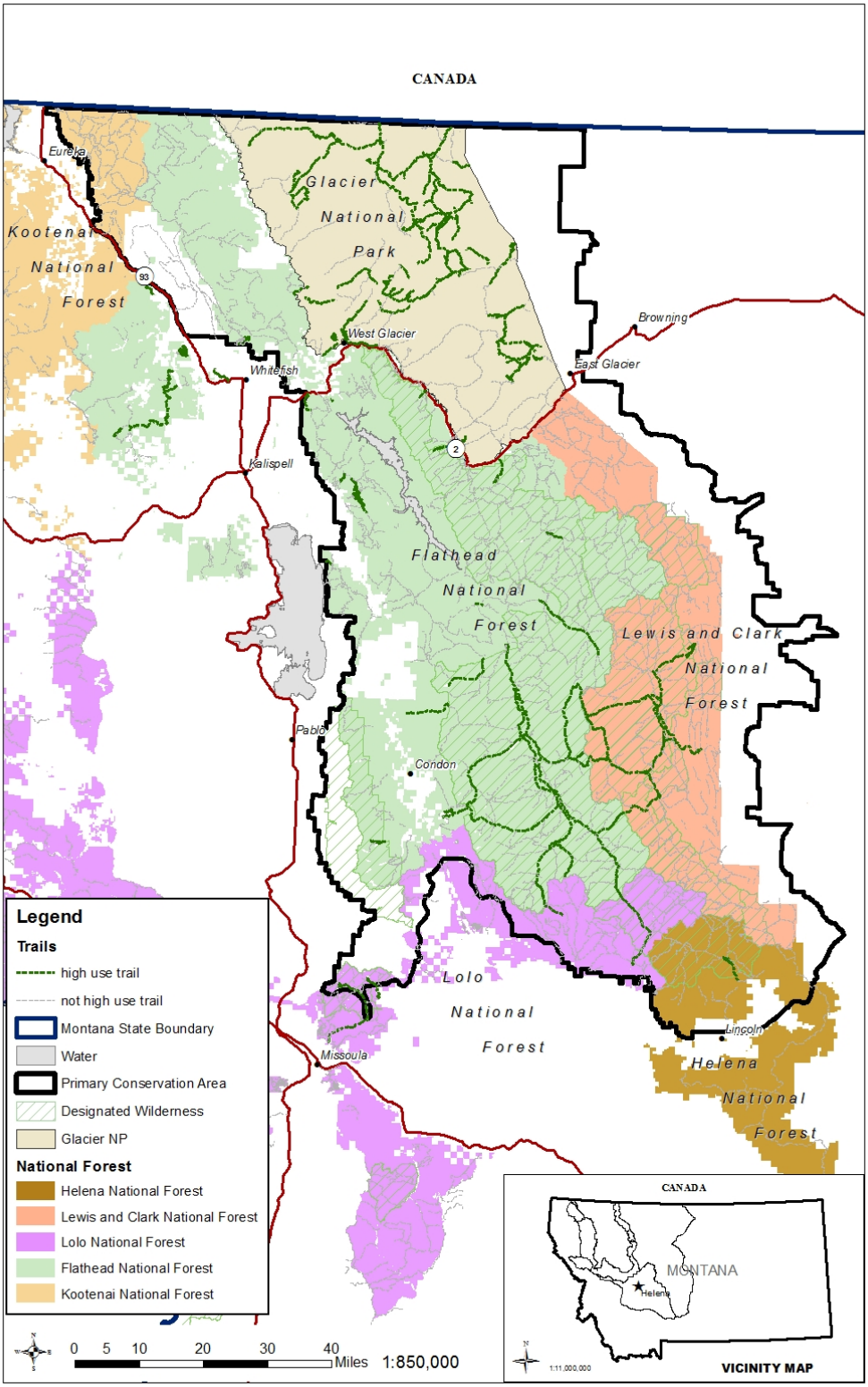


**Figure 1-5. Distribution of trails modeled as "high use" in the NCDE. Note that the majority are located in Glacier National Park or Designated Wilderness.**

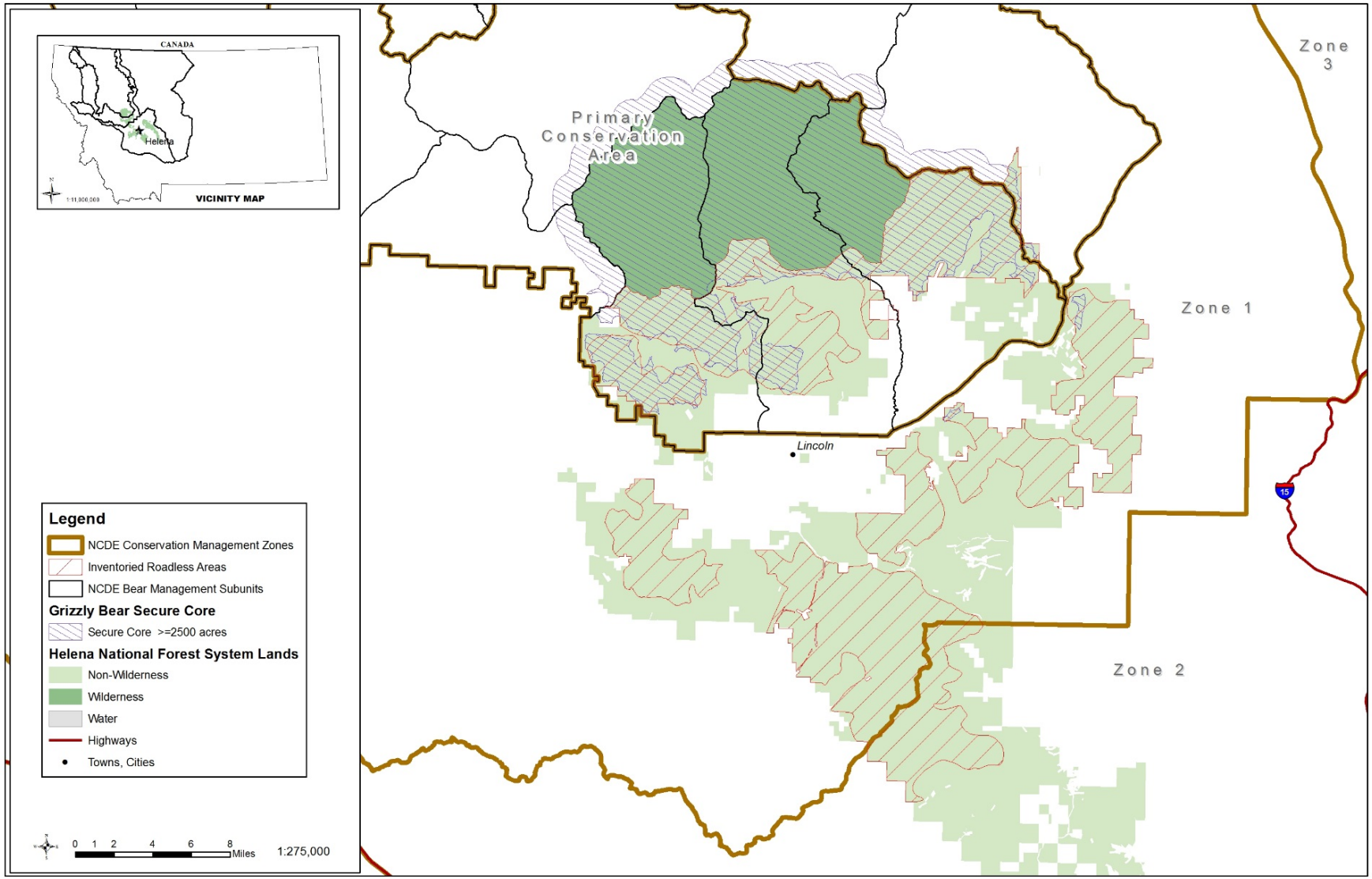


**Figure 1-6. Helena National Forest: Distribution of NCDE Conservation Strategy Management Zones, Bear Management Subunits, Security Core Habitat, Designated Wilderness and Inventoried Roadless Areas.**

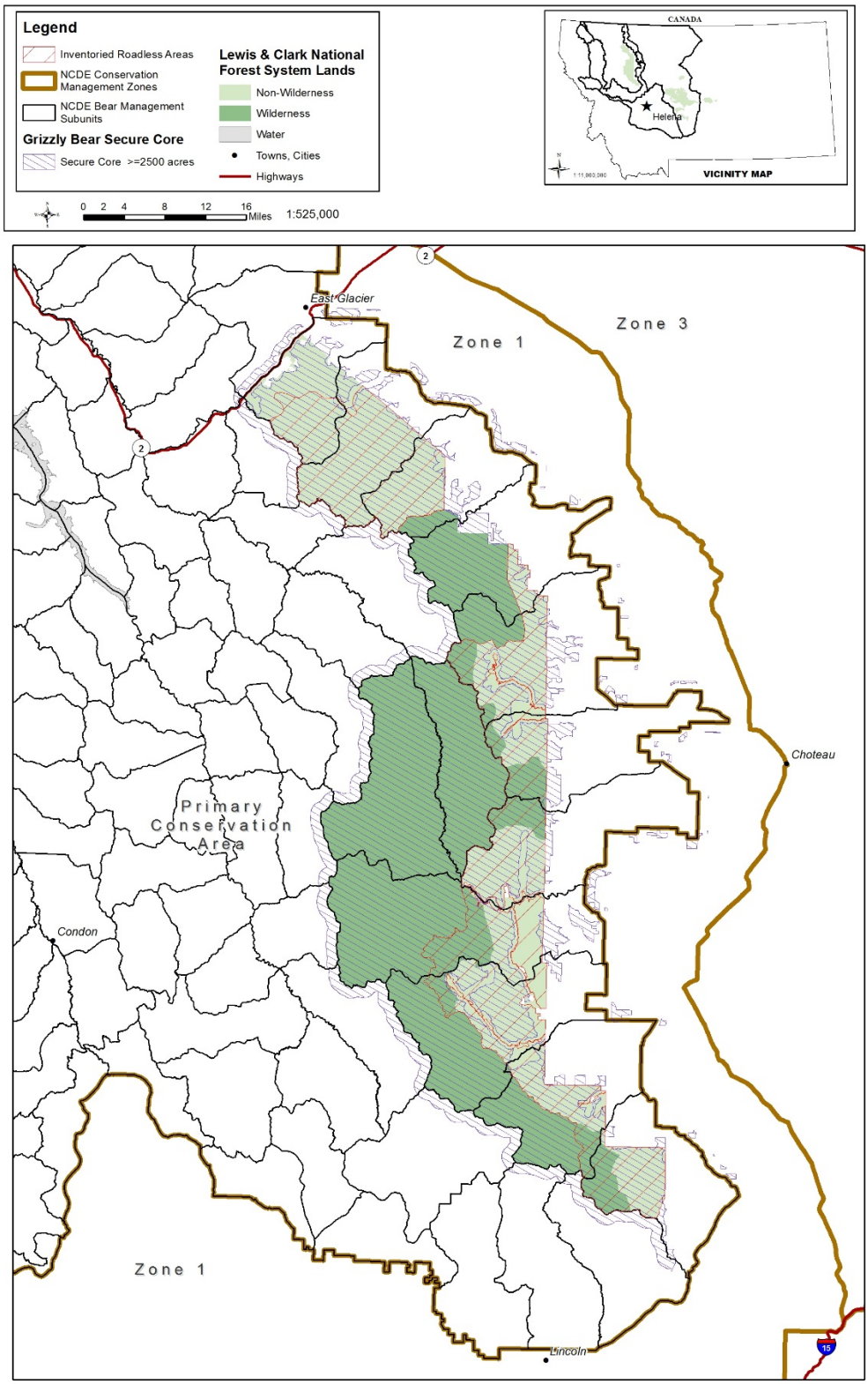


**Figure 1-7: Lewis & Clark National Forest: Distribution of NCDE Conservation Strategy Management Zones, Bear Management Subunits, Security Core Habitat, Designated Wilderness and Inventoried Roadless Areas.**

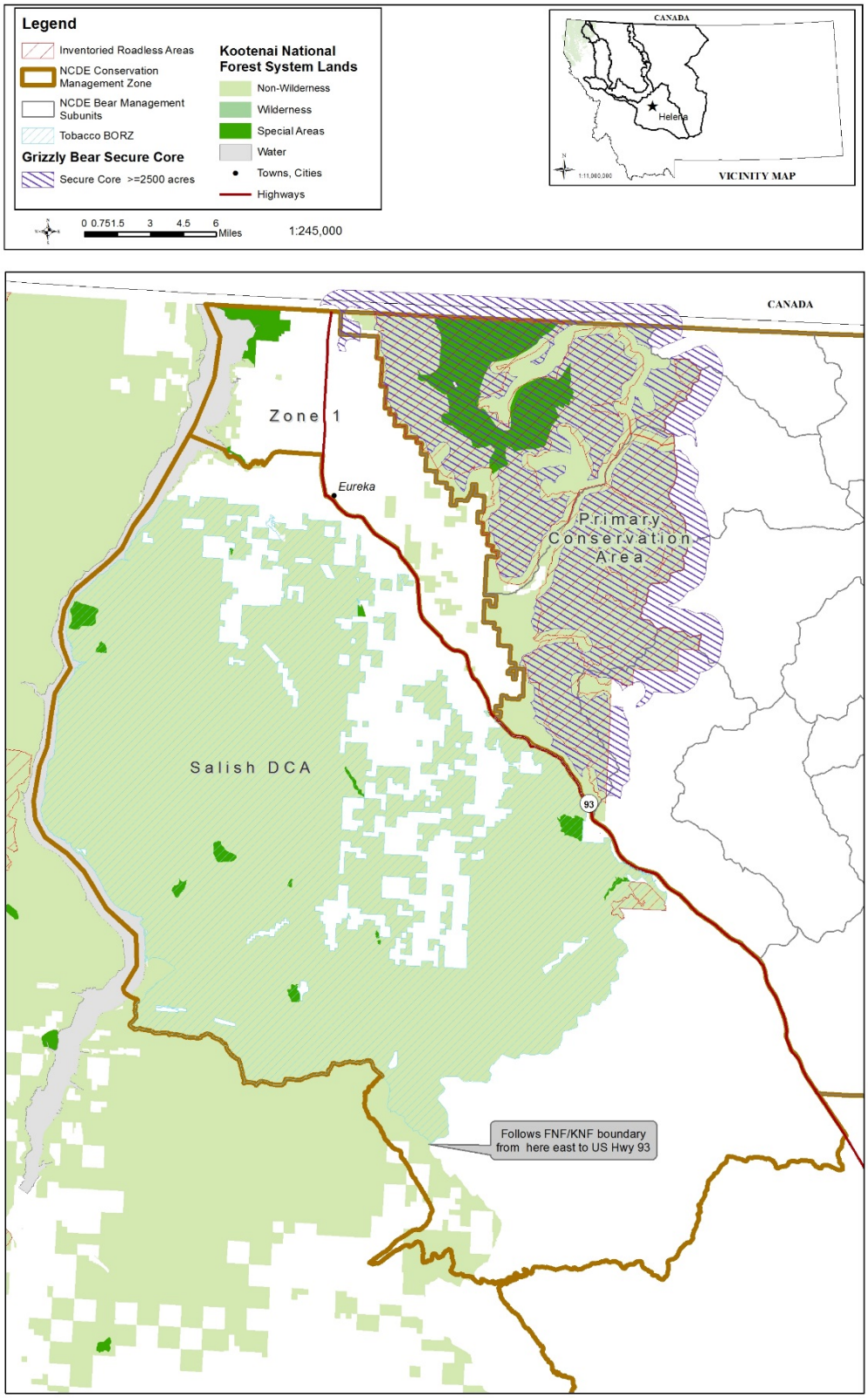


**Figure 1-8. Kootenai National Forest: Distribution of NCDE Conservation Strategy Management Zones, Bear Management Subunits, Security Core Habitat, Designated Wilderness and Inventoried Roadless Areas.**

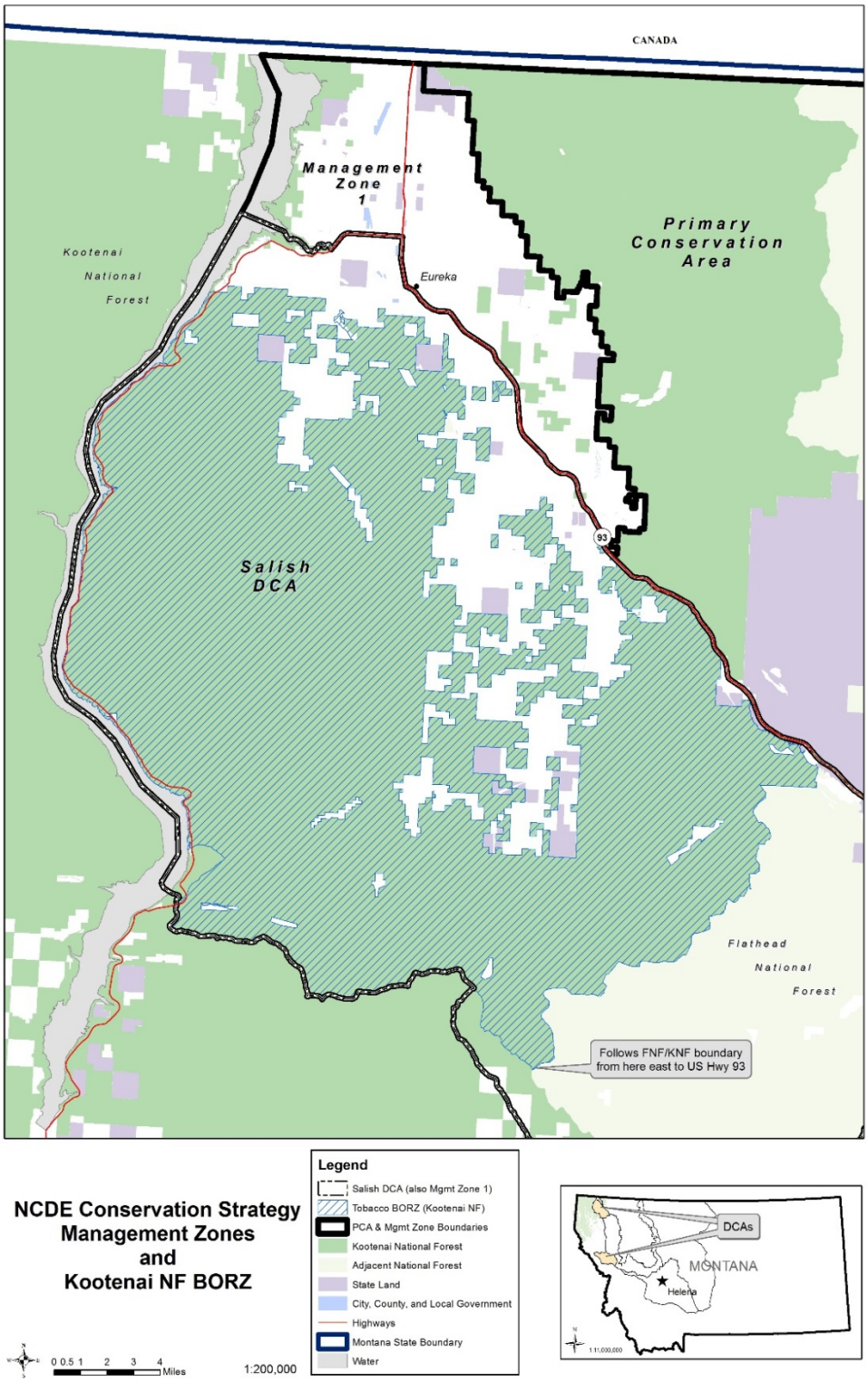


**Figure 1-9. Comparison of NCDE Grizzly Bear Conservation Strategy management zones and Kootenai National Forest Bears Outside the Recovery Zone (BORZ).**

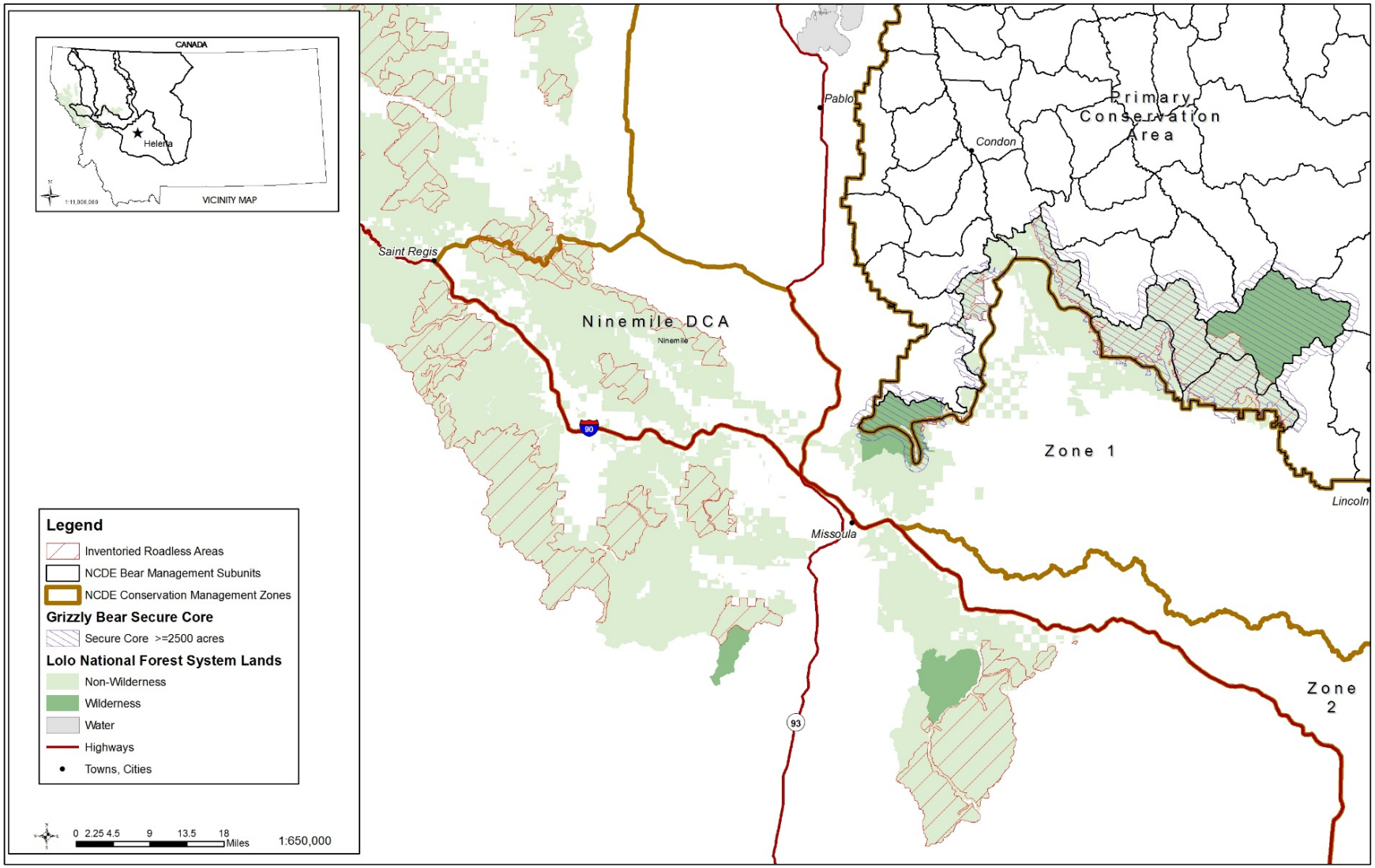


**Figure 1-10. Lolo National Forest: Distribution of NCDE Conservation Strategy Management Zones, Bear Management Subunits, Security Core Habitat, Designated Wilderness and Inventoried Roadless Areas.**

# Appendix 2: Text of Grizzly Bear Amendments and Glossary

The following plan components would support continued recovery of the NCDE grizzly bear population would be incorporated into the Helena, Lewis and Clark, Kootenai, and Lolo forest plans.

# Wildlife (WL)

## Desired Conditions

**NCDE-DC-WL-01**. Within the NCDE primary conservation area, zone 1 (including the Salish and Ninemile demographic connectivity areas) and zone 2, bear attractants on National Forest System lands are stored in a manner that reduces the risk of grizzly bear–human conflicts in the NCDE.

**NCDE-DC-WL-02**. Within the NCDE primary conservation area and zone 1 (including the Salish and the Ninemile demographic connectivity areas), grizzly bear habitat on National Forest System lands contributes to sustaining the recovery of the grizzly bear population in the NCDE and contributes to connectivity with neighboring grizzly bear recovery zones.

**NCDE-DC-WL-03**. The risk of grizzly bear-human conflicts is reduced by information, education, and design features or criteria for management activities.

## Standards

**NCDE-STD-WL-01**. Grizzly bear habitat on National Forest System lands in the NCDE shall be delineated and managed as the primary conservation area, zone 1 (including the Salish and the Ninemile demographic connectivity area), zone 2, or zone 3 (see figure 1 and figure 2 or subsequent USFWS updates if applicable).

**NCDE-STD-WL-02**. Within the NCDE primary conservation area, zone 1 (including the Salish and Ninemile demographic connectivity areas) and zone 2, Food/Wildlife Attractant Storage Special Order(s) shall apply to National Forest System lands.

**NCDE-STD-WL-03**. In each bear management subunit within the NCDE primary conservation area, temporary changes in the open motorized route density, total motorized route density, and secure core shall be calculated for roads used for projects (as defined by “project (in grizzly bear habitat in the NCDE)”) during the non-denning season (see glossary). Calculations will include estimated changes for each year of the anticipated duration of the project and shall be incorporated into the 10-year running average required by standard **NCDE-STD-AR-03**.

## Guidelines

**NCDE-GDL-WL 01**. Within the NCDE primary conservation area, zone 1 (including the Salish and Ninemile demographic connectivity areas) and zone 2, contractors, permittees, lessees, operators, and their employees should be informed of Food/Wildlife Attractant Storage Special Order(s) and procedures for safely working and recreating in grizzly bear country, prior to turn-out of livestock or beginning work and annually thereafter, in order to reduce the risk of grizzly bear–human conflicts.

**NCDE-GDL-WL-02**. Within the NCDE primary conservation area, zone 1 (including the Salish and Ninemile demographic connectivity areas) and zone 2, if a contractor, permittee, lessee, operator or their employees elect to camp on National Forest System lands other than in a developed recreation site, the site should be evaluated and written authorization (i.e., a campsite agreement that includes the Food/Attractant Storage Special Order) should be provided before the campsite is established. The purpose is to reduce the risk of grizzly bear-human conflicts.

**NCDE-GDL-WL-03**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), clover should not be used in seed mixes on National Forest System lands. Native seed mixes or those that are less palatable to grizzly bears should be used so that seeded areas do not become an attractant.

# Access and Recreation (AR)

## Desired Conditions

**NCDE-DC-AR-01**. Within the NCDE primary conservation area, motorized access provides for multiple uses (such as harvesting of timber and non-timber forest products; hunting, fishing, and recreation opportunities) on National Forest System lands while providing open motorized route density (OMRD), total motorized route density (TMRD) and secure core levels that contribute to sustaining recovery of the grizzly bear population in the NCDE.

**NCDE-DC-AR-02**. Within the NCDE Primary Conservation Area, the number, capacity, and improvements of developed recreation sites provide for user comfort and safety while minimizing the risk of grizzly bear–human conflicts on National Forest System lands.

**NCDE-DC-AR-03**. Within each bear management unit in the primary conservation area, increases in the number and capacity of developed recreation sites on National Forest System lands that are designed and managed for overnight use during the non-denning season, are at levels that contribute to sustaining the recovery of the grizzly bear population in the NCDE.

## Standards

**NCDE-STD-AR-01**. Within the NCDE primary conservation area, motorized use of roads with public restrictions shall be permitted for administrative use (see glossary), as long as it does not exceed either 6 trips (3 round trips) per week OR one 30-day unlimited use period during the non-denning season (see glossary). The exceptions to this standard is:

- Emergency situations as defined by 36 CFR 218.21.

*Note*: Administrative use is not included in baseline calculations and is not included in calculations of net increases or decreases. If the level of administrative use exceeds this standard, the use is counted as a project (see "project (in grizzly bear habitat in the NCDE)".

**NCDE-STD-AR-02**. In each bear management subunit within the NCDE primary conservation area, there shall be no net decrease to the baseline (see glossary) for secure core and no net increase to the baseline for open motorized route density or total motorized route density on National Forest System lands during the non-denning season (see glossary). The following conditions are not considered a net increase/decrease from the baseline:

- administrative use (see glossary);
- temporary use of a motorized route for a project (see "project (in grizzly bear habitat in the NCDE)" that meets the conditions stipulated in **NCDE-STD-AR-03**);
- mining activities (as authorized under the Mining Law of 1872) and oil and gas activities (as authorized under the Federal Onshore Oil and Gas Leasing Reform Act of 1987) conducted in accordance with valid existing rights and applicable standards and guidelines listed under NCDE-MIN;
- updated/improved data on a motorized route without an actual change on the ground;
- changes in technology or projections resulting in changed OMRD, TMRD, or secure core values without actual change on the ground (e.g., a switch in geodetic systems from the North American Datum of 1927 to the North American Datum of 1983);
- a road closure location is moved a short distance to a better location (e.g., to the nearest intersection or turnout) to allow a turn-around providing for public safety, to reduce vandalism, or to improve enforcement of the closure;
- the agency exchanges, acquires, buys or sells lands with motorized routes;
- a change in a motorized route is necessary to comply with Federal laws;

- a change in a motorized route is necessary to address grizzly bear–human conflicts, human safety concerns, or resource damage/concerns (e.g., a road paralleling a stream may be decommissioned and replaced by a new upslope road to reduce water quality impacts);
- a change is made by an adjacent non-federal landowner that decreases the percentage of secure core or increases OMRD or TMRD values on adjacent national forest;
- use of a motorized route for emergency situations as defined by 36 CFR 218.21;
- temporary roads (see glosssary).

**NCDE-STD-AR-03**. In each bear management subunit within the NCDE primary conservation area, temporary changes in the open motorized route density, total motorized route density, and secure core shall be allowed for projects (as defined by "project (in grizzly bear habitat in the NCDE)" in the glossary). The 10-year running average for open motorized route density, total motorized route density, and secure core shall not exceed the following limits during the non-denning season (see glossary):

- 5% temporary increase in open motorized route density in each bear management subunit (i.e., OMRD baseline plus 5%);
- 3% temporary increase in total motorized route density in each bear management subunit (i.e., TMRD baseline plus 3%);
- 2% temporary decrease in secure core in each bear management subunit (i.e., secure core baseline minus 2%).

Exceptions to this standard include:

- Temporary changes for emergency situations as defined by 36 CFR 218.21;
- Temporary changes for actions where valid existing rights preclude or constrain agency discretion (e.g., certain contracts, permits, leases, etc.).

Refer to appendix 1 for examples of how to calculate and apply the 10-year running average and temporary increase/decrease.

**NCDE-STD-AR-04**. Within the NCDE primary conservation area, a restricted road may be temporarily opened for public motorized use to allow authorized uses (such as firewood gathering), provided the period of use does not exceed 30 consecutive days during one non-denning season and occurs outside of spring and fall bear hunting seasons. However, temporary public use of a restricted road shall not be authorized in secure core (see glossary).

**NCDE-STD-AR-05**. Within the NCDE primary conservation area, the number and capacity of developed recreation sites on National Forest System lands that are designed and managed for overnight use by the public during the non-denning season (e.g., campgrounds, cabin rentals, huts, guest lodges, recreation residences) shall be limited to one increase above the baseline (see glossary) in the number or capacity per decade per bear management unit (BMU). The following conditions are not considered an increase from the baseline:

- the agency obtains better information or updated information in its database(s);
- the agency acquires land which contains developed recreation sites;
- the agency increases the number or capacity of a developed recreation site in order to comply with Federal laws;
- the agency maintains or modifies an existing overnight developed or dispersed recreation site in such a way that does not increase the number or capacity of the site (e.g., installing a pit toilet to avoid damage to water resources or installing a bear-resistant food storage structure to reduce grizzly bear-human conflicts);
- the agency modifies an existing developed recreation site to enhance human safety (e.g., enlarging a road pull-out to allow trailers to safely turn around) ;
- the agency operates a developed recreation site to allow overnight use only during the denning season (see glossary); and

- the agency makes a corresponding reduction in the number or capacity of overnight developed recreation sites in the same BMU through any of the following means: (1) equal reduction in capacity at another site; (2) closure of a developed site(s); or (3) consolidation and/or elimination of dispersed camping, when and where it can be enforced effectively and it is reasonably assured that new dispersed sites will not develop nearby. *Note:* If these measures are used to offset an increase in number or capacity, they must be in place before the initiation of the increase. If the agency reduces the number or capacity of developed sites below baseline levels, these reductions may be used at a future date to mitigate equivalent impacts of an increase, expansion, or change of use in developed sites within that BMU.

  Note: This standard does not apply to dispersed recreations sites or to developed recreation sites managed for day-use only (e.g., outfitter camps, roadside trail crossings or interpretive pull-outs; trailheads, picnic areas, or boat launches that are closed at night; ski areas that do not have overnight lodging).

**NCDE-STD-AR-06**. Within the NCDE primary conservation area, new or re-authorized recreation permits shall include a clause providing for modification, cancellation, suspension, or temporary cessation of activities if needed to resolve a grizzly bear–human conflict situation.

**NCDE-STD-AR-07**. Within the NCDE primary conservation area, new or re-authorized permits for ski areas on National Forest System lands that operate during the non-denning season shall include requirements to limit the risk of grizzly bear-human conflicts (e.g., to store garbage in a bear-resistant manner).

**NCDE-STD-AR-08.** Within modeled grizzly bear denning habitat in the NCDE primary conservation area, there shall be no net increase in the percentage of area or miles of routes designated for motorized over-snow vehicle use on National Forest System lands during the den emergence time period (see glossary).

## Guidelines

**NCDE-GDL-AR-01**. In each bear management subunit within the NCDE primary conservation area, each project (as defined by “project (in grizzly bear habitat in the NCDE)” in the glossary) should be designed so that on-the-ground implementation does not exceed 5 years to reduce the potential duration of grizzly bear disturbance or displacement due to project-related activities. Exceptions may be made where necessary, for example to accommodate:

- actions where valid existing rights preclude or constrain agency discretion (e.g., certain contracts, permits, leases, etc.);
- prescribed burning (including slash disposal), best management practices to protect water quality, or required reforestation activities; or
- emergency situations as defined by 36 CFR 218.21.

If an extension to the five-year time limitation is required (e.g., to meet contractual obligations or to complete on-the-ground treatments), the reasons should be documented in writing prior to authorization of the extension.

**NCDE-GDL-AR-02**. Within the NCDE primary conservation area, secure core, open motorized route density and total motorized route density should be restored to pre-project levels (as defined by “project (in grizzly bear habitat in the NCDE)” in the glossary) within 1 year after completion of the project, to reduce the potential duration of grizzly bear disturbance due to project-related activities. Exceptions may be made where necessary, for example to accommodate:

- actions where valid existing rights preclude or constrain agency discretion (e.g., certain contracts, permits, leases, etc.);
- prescribed burning (including slash disposal), best management practices to protect water quality, or required reforestation activities; or
- emergency situations as defined by 36 CFR 218.21.

If an extension to the 1-year time limitation is made (e.g., to meet contractual obligations or to complete on-the-ground treatments), the reasons should be documented in writing prior to authorization of the extension.

**NCDE-GDL-AR-03.** Within the NCDE primary conservation area, if the number or capacity of day use or overnight developed recreation sites is increased, the project should include one or more measures to reduce the risk of grizzly-bear human conflicts in that BMU. These measures can include but are not limited to additional public information and education; providing backcountry food-hanging poles or bear-resistant food or garbage storage devices; including design criteria that would limit capacity increases to those needed for public health and safety; and increasing law enforcement and patrols.

# Terrestrial Ecosystems Vegetation (VEG)

## Desired Conditions

**NCDE-DC-VEG-01**. Within the NCDE primary conservation area, the amount, type and distribution of vegetation provides for the ecological, social and economic sustainability of National Forest System lands, while also providing habitat components that contribute to sustaining the recovery of the grizzly bear population in the NCDE.

**NCDE-DC-VEG-02**. Within the NCDE primary conservation area, there is a mosaic of successional stages to provide for grizzly bear habitat needs over the long term.

## Guidelines

**NCDE-GDL-VEG-01**. Within the NCDE primary conservation area, measures to reduce the risk of disturbance to the grizzly bear population should be incorporated into vegetation and fuels project design criteria, which varies on a site-specific basis (e.g., some activities should be restricted in spring habitat during the spring time period; areas with low levels of human activity should be provided adjacent to areas with high levels of disturbance). *Note*: Management activities such as pre-commercial thinning, burning, weed spraying, and implementation of road best management practices may need to be completed during the spring time period in order to meet resource objectives (especially if needed to prevent resource damage), in which case other measures should be used to reduce the risk of disturbance (e.g., limiting the duration of the activity or limiting use of closed roads).

**NCDE-GDL-VEG-02**. Within the NCDE primary conservation area, vegetation management activities should be designed to avoid detrimental effects on the grizzly bear population and to include one or more measures to protect, maintain, increase and/or improve grizzly habitat quantity or quality (e.g., promoting growth of berry-producing shrubs, forbs, or grasses known to be bear foods) in areas where it would not increase the risk of grizzly bear–human conflicts.

**NCDE-GDL-VEG-03**. Within the NCDE primary conservation area, measures to retain cover (where present) along a portion of grass/forb/shrub openings, riparian wildlife habitat, or wetlands, should be incorporated in project design criteria (this varies on a site-specific basis).

**NCDE-GDL-VEG-04.** Within the NCDE primary conservation area, vegetation management projects (including timber sales and other non-commercial vegetation management contracts) should include a clause providing for modification, cancellation, suspension, or temporary cessation of activities, if needed, to resolve a grizzly bear-human conflict situation.

**NCDE-GDL-VEG-05.** To reduce the risk of grizzly-bear human conflicts within the NCDE primary conservation area, vegetation management activities designed to enhance grizzly habitat (e.g., increase huckleberry production) should not occur in or next to campgrounds, administrative facilities or other developed recreation sites that operate during the non-denning season.

# Grazing (GRZ)

## Desired Condition

**NCDE-DC-GRZ-01**.Within the NCDE primary conservation area, the number of, capacity of, and improvements on cattle and sheep grazing allotments support ecologically sustainable grazing, and temporary grazing permits are used for effective management of noxious weeds, while minimizing the risk of bear-human conflicts on National Forest System lands.

## Standards

**NCDE-STD-GRZ-01**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), new or re-authorized grazing permits and annual operating plans shall incorporate requirements to reduce the risk of grizzly bear–human conflicts (e.g., food/wildlife attractant storage special order). New or re-authorized permits shall include a clause providing for modification, cancellation, suspension, or temporary cessation of activities, if needed, to resolve a grizzly bear–human conflict situation.

**NCDE-STD-GRZ-02**. Within the NCDE primary conservation area, a sheep grazing permit in non-use status shall not be allowed to increase allowable animal unit months beyond what was previously permitted prior to being in non-use when it is returned to use.

**NCDE-STD-GRZ-03**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), permits for livestock grazing shall include a provision that requires reporting livestock carcasses within 24 hours of discovery, which shall be followed by proper disposal of the carcass. Bone yards shall not be established on National Forest System lands.

**NCDE-STD-GRZ-04**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), there shall be no net increase in the number of active sheep allotments or in permitted sheep animal unit months above the baseline (see glossary) on National Forest System lands. Allowable animal unit months shall not be increased for inactive allotments. *Note*: Existing allotments may be combined or divided as long as it does not result in grazing allotments in currently unallotted lands.

**NCDE-STD-GRZ-05**. Within the NCDE Primary Conservation Area, there shall be no net increase in the number of active cattle grazing allotments above the baseline (see glossary) on National Forest System lands. *Note*: Existing allotments may be combined or divided as long as that does not result in grazing allotments in currently unallotted lands.

**NCDE-STD-GRZ-06**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), temporary permits for grazing by small livestock for purposes such as controlling invasive exotic weeds or reducing fire risk, or trailing of small livestock across National Forest System lands, shall not result in an increase in bear/small livestock conflicts.

## Guidelines

**NCDE-GDL-GRZ-01**. Within the NCDE primary conservation area, the number of open or active sheep grazing allotments on NFS lands should be reduced if an opportunity exists with willing permittee, to reduce the risk of conflicts with grizzly bears.

**NCDE-GDL-GRZ-02**. Within the NCDE primary conservation area, an allotment management plan and plan of operation should specify any needed measures to protect key grizzly bear food production areas (e.g., wet meadows, stream bottoms, aspen groves, and other riparian wildlife habitats) from conflicting and competing use by livestock (this varies on a site-specific basis).

# Special Forest Products (SFP)

## Desired Condition

**NCDE-DC-SFP-01**. National Forest System lands provide a variety of public services and special forest products (such as mushrooms, huckleberries, firewood) from National Forest System lands while minimizing the risk of grizzly bear–human conflicts on National Forest System lands in the NCDE.

## Standard

**NCDE-STD-SFP-01**. Special use permits for apiaries (beehives) located on National Forest System lands shall incorporate measures including electric fencing to reduce the risk of grizzly bear–human conflicts, as specified in the food/wildlife attractant storage special order.

# Renewable/Non-Renewable Energy and Mineral Resources (MIN)

## Desired Condition

**NCDE-DC-MIN-01**. Mineral materials are available based upon public interest, in-service needs, material availability, and valid existing rights, where consistent with desired conditions for other resources.

## Standards

**NCDE-STD-MIN-01**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), mining activities (as authorized under the Mining Law of 1872) and oil and gas activities (as authorized under the Federal Onshore Oil and Gas Leasing Reform Act of 1987) occurring on National Forest System lands, where feasible shall avoid, minimize and/or mitigate environmental impacts to grizzly bears or their habitat, subject to valid existing rights. Stipulations or mitigation measures already included in existing leases, permits, or plans of operation on National Forest System lands shall not be changed, nor will additional stipulations or mitigation measures be added, without the lease, permit, or plan of operation holder's agreement.

**NCDE-STD-MIN-02**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), new or re-authorized permits, leases, and/or plans of operation shall include a provision for modification or temporary cessation of activities if needed to resolve a grizzly bear–human conflict situation.

**NCDE-STD-MIN-03**. Within the NCDE Primary Conservation Area and zone 1 (including the Salish and Ninemile demographic connectivity areas), new plans of operation, permits, and/or leases for mineral activities shall include measures to reasonably mitigate potential impacts of mineral development for the following:

- land surface and vegetation disturbance;
- water table alterations that affect bear foods on the surface; and
- construction, operation, and reclamation of mine-related facilities such as impoundments, rights of way, motorized routes, pipelines, canals, transmission lines or other structures.

**NCDE-STD-MIN-04**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), in addition to measures included in the food/wildlife attractant storage special order(s), new plans of operation, permits, and/or leases for mineral activities shall include the following measures regarding grizzly bear attractants:

- bear resistant food storage and garbage containers shall be used at development sites and at any campgrounds or dispersed sites where exploration or production-related human occupancy is anticipated;

- garbage shall be removed in a timely manner;
- road kills shall be removed daily during active operating periods to a designated location determined in close coordination with Montana Fish, Wildlife and Parks;
- feeding of wildlife shall not be allowed; and
- locations of work camps shall be approved in advance of operations. Food storage requirements shall be strictly adhered to in any work camps.

**NCDE-STD-MIN-05**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), if minerals activities have the potential to adversely affect grizzly bears or their habitat as determined by a site-specific analysis, new plans of operation, permits, and/or leases for mineral activities shall include the following mitigation measures, stipulations, or surface use criteria regarding grizzly bear habitat:

- Ground-disturbing activities in identified grizzly bear spring habitat (as identified in a site specific biological evaluation or other environmental document) shall be avoided between April 1 and June 30. If timing restrictions are not practicable, other measures shall be taken to reasonably mitigate negative impacts of mineral activity to grizzly bears;
- Seismic activity in identified grizzly bear denning habitat (as identified in a site specific biological evaluation or other environmental document) shall be avoided during the denning season (see glossary). If timing restrictions are not practicable, other measures shall be taken to reasonably mitigate negative impacts of mineral activity to grizzly bears;
- Cumulative impacts of multiple, concurrent seismic and/or drilling operations shall be limited by timing restrictions. If timing restrictions are not practicable, reasonable and appropriate measures shall be taken to mitigate negative impacts to the grizzly bear;
- Reasonable and appropriate measures regarding the maintenance, rehabilitation, restoration or mitigation of functioning aquatic systems and riparian habitat conservation areas shall identify how reclamation will occur, plant species to be used in reclamation, a timeframe of when reclamation will be completed, and monitoring criteria; and
- Reclamation and revegetation of motorized routes, drilling pads, and other areas disturbed from mineral activities shall be completed as soon as practicable by the operator.

**NCDE-STD-MIN-06**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), if mineral activities have the potential to adversely affect grizzly bears or their habitat as determined by a site-specific analysis, new plans of operations, permits, and/or leases shall include the following mitigation measures regarding motorized access:

- Public motorized use that is not associated with minerals activities shall be prohibited on motorized routes constructed for exploration and/or development;
- A traffic management plan shall be developed as part of the proposed activity to identify when and how motorized routes will be used, maintained, and monitored (if required), and how motorized route standards and guidelines will be implemented after activities have ended;
- Helicopter use associated with seismic activity, exploration, drilling or development must follow an approved plan or permit;
- Speed limits shall be adopted on motorized routes if needed to prevent or reduce collisions with grizzly bears.

**NCDE-STD-MIN-07**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), minerals contractors and lessees shall require employees to attend training related to safely living near and working in grizzly bear habitat prior to starting work, and on an annual basis thereafter.

**NCDE-STD-MIN-08**. Within the NCDE primary conservation area, new leases for leasable minerals shall include a no surface occupancy stipulation (see glossary).

## Guidelines

**NCDE-GDL-MIN-01**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), in addition to forest-wide guidelines, the following guidelines apply to new leasable minerals activities including leases, surface use plans for proposed wells or operations, and permits to conduct seismic exploration or drilling.

To reduce potential grizzly bear disturbance or displacement, helicopter use plans should:

- Avoid establishing recurring helicopter use (see glossary), especially in spring habitats or other known important grizzly bear habitats or use areas; and
- Avoid establishing landing zones, especially in spring habitats or other known important grizzly bear habitats or use areas. If a landing zone is deemed necessary for safe implementation of the seismic or surface use plan or permit to drill, the landing zone should be constructed only in an area that has had site-specific analysis and approval.

**NCDE-GDL-MIN-02**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), leasable energy activities should use the best available noise-reduction technology on equipment and motorized vehicles to reduce potential disturbance or displacement of grizzly bears, whenever possible.

**NCDE-GDL-MIN-03**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), along motorized routes, seismic corridors, and pipelines constructed for leasable energy activities, wildlife cover should be maintained at regular intervals, where present (this varies on a site specific basis), in order to provide habitat connectivity for grizzly bears.

**NCDE-GDL-MIN-04**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), for locatable and non-energy leasable minerals activities with the potential to adversely affect the grizzly bear or its habitat (this varies on a site-specific basis), the following tiered measures should be considered to mitigate impacts to grizzly bear habitat. Beginning at Step 1, any subsequent steps would be implemented only if the prior steps are not possible or achievable.

- Step 1: The operator should reclaim the affected area back to suitable bear habitat that has similar or improved characteristics and qualities as the original habitat (such as the same native vegetation).
- Step 2: If Step 1 is not attainable, operators should either acquire a perpetual conservation easement (or easements) or purchase comparable or better replacement grizzly bear habitat within the primary conservation area. Acquisition of habitat within connectivity corridors could also be considered for mitigation, when appropriate. Habitat acquired for mitigation may require a purchase rate of >1:1 on an acreage basis, depending on the quality of habitat degraded and habitat available for acquisition.
- Step 3: If Steps 1 and 2 are not achievable, the next option is to offset negative effects to bears and grizzly bear habitat with other appropriate types of actions.

**NCDE-GDL-MIN-05**. Within the NCDE primary conservation area and zone 1 (including the Salish and Ninemile demographic connectivity areas), carrying bear deterrent spray should be recommended to mineral permittees, lessees and operators to reduce the risk of grizzly bear-human conflicts.

**NCDE-GDL-MIN-06**. Within the NCDE primary conservation area and zone 1(including the Salish and Ninemile demographic connectivity areas), available resources at existing gravel pits should be used before constructing new pits to reduce the risk of grizzly bear disturbance or displacement associated with blasting of rock or crushing of gravel.

# Helena National Forest—Zone 1, Zone 2

## Desired Conditions

**NCDE-HNF Zone 1-DC-01**. Within zone 1 on the Helena-Lewis and Clark National Forest, roads and trails provide for public and administrative access to National Forest System lands. Grizzly bear habitat in zone 1 contributes to sustaining recovery of the grizzly bear population in the NCDE and providing the opportunity for movement of male bears to provide genetic connectivity with the Greater Yellowstone Ecosystem.

**NCDE-HNF Zone 1&2-DC-02**. On the Helena-Lewis and Clark National Forest within zone 1 and the portion of zone 2 west of Interstate 15, National Forest System lands adjacent to highways are consolidated and other efforts to reduce barriers to genetic connectivity of grizzly bear populations are supported.

## Standards

**NCDE-HNF Zone 1-STD-01**. Within zone 1 on the Helena-Lewis and Clark National Forest, there shall be no net increase above the baseline in density of motorized routes (roads and trails) open to public motorized use during the non-denning season on NFS lands. Open motorized route density is calculated by dividing the total miles of open motorized routes on NFS lands in zone 1 by the total square miles of NFS land area in that same area. This standard does not apply to the following:

- motorized use by agency personnel or others authorized by the appropriate agency personnel;
- temporarily opening a motorized route for a short period of time to allow for public firewood gathering and other authorized use;
- updated or improved data without an actual change on the ground;
- changes in technology or projections result in changed calculations without actual change on the ground (e.g., a switch in geodetic systems from North American Datum of 1927 to the North American Datum of 1983);
- a road closure location is moved a short distance to a better location (e.g., to the nearest intersection or turnout ) to allow a turnaround providing for public safety, to reduce vandalism, or to improve enforcement of the closure;
- the agency exchanges, acquires, buys or sells lands with motorized routes;
- a change in a motorized route is necessary to comply with Federal laws;
- motorized use for mining activities (as authorized under the Mining Law of 1872) and oil and gas activities (as authorized under the Federal Onshore Oil and Gas Leasing Reform Act of 1987) conducted in accordance with valid existing rights and applicable standards and guidelines;
- a change in a motorized route is necessary to address grizzly bear-human conflicts, resource damage, or human safety concerns;
- use of motorized routes in emergency situations as defined by 36 CFR 218.21; and
- temporary roads (see glossary).

# Kootenai National Forest—Zone 1

## Desired Conditions

**NCDE-KNF Zone 1-DC-01**. Within zone 1 (including the Salish demographic connectivity area), roads provide for public and administrative access to National Forest System lands while contributing to sustaining the grizzly bear population in the NCDE. The demographic connectivity area provides habitat that can be used by female grizzly bears and allows for bear movement between grizzly bear ecosystems.

**NCDE-KNF Zone 1-DC-02.** In areas between the primary conservation area and the Salish demographic connectivity area, National Forest System lands are consolidated and conservation easements with willing

landowners are supported in a manner that provides habitat connectivity and facilitates movement of wildlife. *See also* FW-DC-WL-17, FW-GDL-WL-14 and GA-DC-WL-TOB-02.

### Standards

**NCDE- KNF Zone 1-STD-01**. Within zone 1 (including the Salish demographic connectivity area) on the Kootenai National Forest, there shall be no increases in permanent linear miles of open roads, total roads, or motorized trails within the bears outside recovery zone polygons, with listed exceptions (Kootenai forest plan, appendix B). A temporary increase in open and total miles of road is allowed under specified conditions (Kootenai forest plan, appendix B, p. 150).

**NCDE-KNF Zone 1-STD-02**. Within zone 1 on the Kootenai National Forest (including the Salish demographic connectivity area), National Forest System lands which lie outside the area covered by the Tobacco bears outside the recovery zone polygons (Kootenai forest plan, appendix B, pp. 150-151) shall be managed according to Kootenai National Forest Plan direction.

## Lolo National Forest—Zone 1

### Desired Conditions

**NCDE-LNF Zone 1-DC-01**. Within the Lolo National Forest portion of NCDE zone 1 (including the Ninemile demographic connectivity area), roads provide for public and administrative access to National Forest System lands while contributing to sustaining the grizzly bear population in the NCDE. The Ninemile demographic connectivity area provides habitat that can be used by female grizzly bears and allows for bear movement between grizzly bear ecosystems.

**NCDE-LNF Zone 1-DC-02**. In areas between the primary conservation area and the Ninemile demographic connectivity area, National Forest System lands are consolidated and conservation easements with willing landowners are supported in a manner that provides habitat connectivity and facilitates movement of wildlife.

### Standards

**NCDE-LNF Zone 1-STD-01**. Within zone 1 (outside the Ninemile demographic connectivity area) on the Lolo National Forest, there shall be no net increase above the baseline (see glossary) in the density of roads open to public motorized use during the non-denning season on National Forest System lands. Inside the Ninemile demographic connectivity area, there shall be no net increase above the baseline (see glossary) in the density of roads and trails open to public motorized use during the non-denning season on National Forest System lands. Density is calculated by dividing the total miles open to public motorized use on NFS lands during the non-denning season, by the total square miles of NFS lands in that same area. This standard does not apply to the following:

- motorized use by agency personnel or others authorized by the appropriate agency personnel;
- temporarily opening a road for a short periods of time to allow for public firewood gathering and other authorized use;
- updated/improved data on a motorized route without an actual change on the ground;
- changes in technology or projections result in changed calculations without actual change on the ground (e.g., a switch in geodetic systems from the North American Datum of 1927 to the North American Datum of 1983);
- a road closure location is moved a short distance (e.g., to the nearest intersection or turnout) to a better location to allow turn-arounds providing for public safety, to reduce vandalism, or to improve enforcement of the closure;
- the agency exchanges, acquires, buys or sells lands with motorized routes;
- a change in an open road is necessary to comply with Federal laws;

- motorized use for mining activities (as authorized under the Mining Law of 1872) and oil and gas activities (as authorized under the Federal Onshore Oil and Gas Leasing Reform Act of 1987) conducted in accordance with valid existing rights and applicable standards and guidelines;
- a change in motorized route is necessary to address grizzly bear–human conflicts, human safety concerns or resource damage/concerns (e.g., a road paralleling a stream may be decommissioned and replaced by a new upslope road to reduce water quality impacts);
- motorized use for emergency situations as defined by 36 CFR 218.21;
- temporary roads (see glossary).

## Monitoring (MON)

**NCDE-MON-01**. Within the NCDE primary conservation area, the levels of secure core, open motorized route density (> 1 mi/mi$^2$) and total motorized route density (> 2 mi/mi$^2$) within each bear management unit (BMU) subunit during the non-denning season, will be monitored and compared to the baseline.

**NCDE-MON-02**. Within the NCDE primary conservation area, the number and overnight capacity of developed recreation sites designed and managed for overnight use on National Forest System lands within each BMU will be monitored and compared to the baseline. The number of day use recreation sites and trailheads in each BMU in the NCDE primary conservation area and administrative sites (see glossary) will also be monitored.

**NCDE-MON-03**. Within the NCDE primary conservation area, the numbers of commercial livestock grazing allotments and the numbers of sheep animal unit months on National Forest system lands will be monitored and compared to the baseline. In the NCDE primary conservation area and zone, the number of grizzly bear-livestock conflicts occurring annually on National Forest System lands will be monitored.

**NCDE-MON-04**. Within the NCDE primary conservation area and zone 1 (including the Salish and the Ninemile demographic connectivity areas), where it is determined there is potential for adverse effects to the grizzly bear population or its habitat resulting from leasable or locatable mineral activities, a monitoring plan will be developed for the life of the mineral activity. The monitoring plan will outline how changes in habitat and/or disturbance to bears will be monitored and mitigations (e.g., monitoring of mining reclamation measures) will be identified and funded.

**NCDE-MON-05.** Within the NCDE primary conservation area, the 10-year running average of open motorized route density, total motorized route density and secure core will be monitored by forest staff and documented for each project (see NCDE STD-AR-03 and the definition of "project (in grizzly bear habitat in the NCDE)" in the glossary).

**NCDE-MON-06.** Within the NCDE primary conservation area, the duration of projects will be monitored by forest staff (see **NCDE-GDL-AR-01** and the definition of "project (in grizzly bear habitat in the NCDE)" in the glossary).

**NCDE-MON-07**. In NCDE zone 1 on the Helena National Forest, the density of motorized routes open for public use during the non-denning season on National Forest System lands will be monitored and compared with the baseline.

**NCDE-MON-08**. In NCDE zone 1 on the Kootenai National Forest, the permanent linear miles of open roads, total roads and motorized trails on National Forest System lands within the bears outside recovery zone (BORZ) polygons will be monitored.

**NCDE-MON-09**. In NCDE zone 1 outside of the Ninemile demographic connectivity area on the Lolo National Forest, the density of roads open for public motorized use during the non-denning season on National Forest System lands will be monitored and compared with the baseline. Inside the Ninemile demographic connectivity area, the density of roads and trails open to public motorized use on National Forest System lands will be monitored and compared with the baseline.

**NCDE-MON-10**. In the NCDE primary conservation area, the percentage of modeled grizzly bear denning habitat (as updated by MFWP) where public motorized over-snow use is allowed during the den emergence time period will be monitored and compared to the baseline.

# How changes in route density and secure core would be implemented

As stated in NCDE-STD-AR-03, in each bear management subunit within the NCDE primary conservation area, temporary changes in the open motorized route density, total motorized route density and secure core shall be calculated for projects (as defined by "project (in grizzly bear habitat in the NCDE)" in the glossary).

The 10-year running average for open motorized route density, total motorized route density, and secure core numeric parameters shall not exceed the following limits per bear management subunit:

- 5% temporary increase in open motorized route density in each subunit (i.e., open motorized route density baseline plus 5%);
- 3% temporary increase in total motorized route density in each subunit (i.e., total motorized route density baseline plus 3%);
- 2% temporary decrease in secure core in each subunit (i.e., secure core baseline minus 2%).

## Hypothetical example

The following hypothetical example (displayed as tables 2-1 and 2-2) shows how temporary changes in open motorized route density (OMRD), total motorized route density (TMRD), and secure core would be implemented for a project.

**Table 2-1. Values in a bear management subunit for OMRD, TMRD, and secure core for project in years 11 through 14**

| Variable | Baseline Value | Allowed Value for Project | year 1 | year 2 | year 3 | year 4 | year 5 | year 6 | year 7 | year 8 | year 9 | year 10 | project year 11 | project year 12 | project year 13 | project year 14 | year 15 | year 16 | year 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OMRD | 19 | 24 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 31 | 31 | 31 | 31 | 19 | 19 | 19 |
| TMRD | 19 | 22 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 22 | 22 | 22 | 22 | 19 | 19 | 19 |
| Secure Core | 69 | 67 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 63 | 63 | 63 | 63 | 69 | 69 | 69 |

**Table 2-2. Using data from table 2-1 to show the 10-year running averages for OMRD, TMRD, and secure core before, during, and after project completion**

| Variable | Before yr 1-10 | During yr 2-11 | During yr 3-12 | During yr 4-13 | During yr 5-14 | During yr 6-15 | After yr 7-16 | After yr 8-17 |
|---|---|---|---|---|---|---|---|---|
| OMRD | 19 | 20 | 21 | 23 | 24 | 24 | 24 | 24 |
| TMRD | 19 | 19 | 20 | 20 | 20 | 20 | 20 | 20 |
| Secure Core | 69 | 69 | 68 | 67 | 67 | 67 | 67 | 67 |

# Glossary

The following terms, and definitions, are to be used only where they apply within the Northern Continental Divide Ecosystem (NCDE) for grizzly bears, see amendment standard NCDE-STD-WL-01.

**administrative site** a location or facility constructed for use primarily by government employees to facilitate the administration and management of public lands. Examples on National Forest Service lands include, but are not limited to, ranger stations, warehouses, and guard stations.

**administrative use** a generic term for authorized agency activity. Specifically, in the portion of the NCDE for grizzly bears mapped as the primary conservation area, motorized use of roads closed to the public is permitted for Federal agency personnel or personnel authorized to perform duties by appropriate agency officials, as long as it does not exceed either 6 trips (3 round trips) per week OR one 30-day unlimited use period during the non-denning season (see **non-denning season**).

**baseline** the baseline for the NCDE is defined as conditions as of December 31, 2011, as modified by changes in numbers that were evaluated and found to be acceptable through the Endangered Species Act Section 7 consultation with USFWS while the grizzly bear was listed as Threatened. The baseline will be updated to reflect changes allowed under the standards and guidelines.

**bear management subunit** an area of a bear management unit, in the portion of the NCDE for grizzly bears mapped as the primary conservation area, representing the approximate size of an average annual female grizzly bear home range (e.g., 31-68 $mi^2$ (R. D. Mace & Roberts, 2012)).

**bear management unit** an area about 400 $m^2$, in the portion of the NCDE for grizzly bears mapped as the primary conservation area that meets yearlong habitat needs of both male and female grizzly bears.

**boneyard** an established site that is used by a grazing permittee for disposing of entire animal carcasses.

**capacity (of developed recreation sites within the NCDE primary conservation area)** the number of sites available in a campground; or the number of rooms available for lodging (as a commercial rental); or the number of cabins, bunkhouses or recreation residences available for overnight use (managed under a special use permit).

**consultation** a process required by Section 7 of the Endangered Species Act whereby federal agencies proposing activities that may affect a listed species or critical habitat confer with the U.S. Fish and Wildlife Service about the impacts of the activity on the species (50 CFR 402).

**cover** the elements of the environment used by an animal for hiding. Cover varies depending upon the species or the time of year and may include a variety of vegetation types as well as topography. The amount and quality of cover needed depends on the animal's size, mobility, and reluctance or willingness to venture into relatively open areas.

**demographic connectivity area** an area intended to allow female grizzly bear occupancy and potential dispersal beyond the NCDE to other recovery areas.

**den emergence time period** the spring-time period when a grizzly bear emerges from its den and remains in the vicinity before moving to lower elevations. The den emergence time period occurs at the beginning of the non-denning season. Females with cubs usually emerge later and spend more time (a few days to a few weeks) near the den after emergence, than do male bears.

**denning season** the typical time period, within the NCDE, during which most grizzly bears are hibernating in dens. There are no restrictions on motorized use related to grizzly bears during the denning season, which occurs:

- west side of the Continental Divide: from 1 December through 31 March.
- east of the Continental Divide: from 1 December through 15 April.

**developed recreation site capacity within the NCDE primary conservation area** for purposes of implementing standard NCDE-STD-AR-05, developed recreation site capacity on NFS lands that are designed and managed for overnight use includes:

- the number of camp sites available in a campground
- the number of rooms available for lodging at a ski area or guest lodge
- the maximum sleeping capacity of a cabin rental or bunkhouse that is available for overnight use by the public
- the maximum parking capacity at picnic areas, trailheads, or boat launches that are not closed to overnight use [NCDE]

**developed recreation site within the NCDE primary conservation area** for purposes of implementing standard NCDE-STD-AR-05, developed recreation sites on NFS lands that are designed and managed for overnight use includes campgrounds, lodging at ski areas, cabin rentals, huts, guest lodges, recreation residences. This standard does not apply to dispersed recreations sites nor to developed recreation sites managed for day-use only (e.g., outfitter camps, roadside trail crossings or interpretive pull-outs; trailheads, picnic areas, or boat launches that are closed at night; ski areas that do not have overnight lodging). [NCDE]

**dispersed recreation** An area in a national forest or national grassland with limited or no amenities provided for recreational users 36 CFR § 261.2.

**emergency situation** a circumstance on National Forest System lands for which immediate implementation of all or part of a decision is necessary for relief from hazards threatening human health and safety or natural resources on those National Forest System or adjacent lands; or that would result in substantial loss of economic value to the Federal Government if implementation of the decision were delayed. (36 CFR 218.21)

**grazing allotment** a designated area of land that is available for livestock grazing and is represented on a map. A grazing allotment can include National Forest Service (NFS) and non-NFS lands. Permits are issued for the use of allotments or portions of allotments. Allotments may be:

- **active**: Livestock grazing allotments that are in use, including pack and saddle stock allotments.
- **closed**: Areas having suitable livestock range that have been closed to livestock grazing by administrative decision or action.
- **combined**: An allotment that has been combined into another allotment and therefore, no longer exists as an independent allotment.
- **vacant**: An allotment that does not have a current grazing permit issued. (Forest Service Manual 2205)

**grazing permit in non-use status** a term that applies to livestock numbers. Non-use of a term grazing permit, in whole or in part, must be approved by a Forest Supervisor and is allowed for permittee convenience, resource protection or development, or range research (Forest Service Manual 2231.7).

**grazing permit in inactive status** all permitted uses have expired, been cancelled, or been waived.

**grizzly bear–human conflict** an interaction between a grizzly bear and human in which bears either do, or attempt to, injure people, damage property, kill or injure livestock, damage beehives, obtain anthropogenic foods or attractants or agricultural crops.

**livestock** a type of domestic animal raised for commercial production purposes, e.g., cattle. Small livestock includes animals smaller than a cow, such as sheep, goats, and llamas.

**mitigate** to avoid, minimize, rectify, reduce, or compensate the adverse environmental impacts associated with an action.

**motorized route** a National Forest System road or trail that is designated for motorized use on a motor vehicle use map pursuant to 36 CFR 212.51.

**motorized use** the designation of roads, trails, and areas that are open to motor vehicle use as specified in Federal Register / Vol. 70, No. 216 / Wednesday, November 9, 2005 /36 CFR Parts 212, 251, 261, Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule.

**moving window analysis** a geographic information system procedure that quantifies the density of roads and trails by incrementally moving a template across a digital map.

**net change** the difference in a measurement (such as road density) after on-the-ground changes are accounted for pre- and post-project; allows for temporary changes during a project.

**no surface occupancy (NSO)** a fluid mineral leasing stipulation that prohibits use or occupancy of the land surface in order to protect identified resource values. Lessees may develop the oil and gas or geothermal resources under the area restricted by this stipulation through use of directional drilling from sites outside the no surface occupancy area.

**Northern Continental Divide Ecosystem** a region identified in the Grizzly Bear Conservation Strategy encompassing about 27.3 million acres of land in western and central Montana that is one of five areas in the lower 48 states where grizzly bear populations occur.

**NCDE Coordinating Committee** an interagency group that evaluates implementation of the NCDE grizzly bear conservation strategy, promotes the exchange of data and information about the NCDE grizzly bear population among agencies and the public, and makes recommendations to the management agencies regarding implementation of the NCDE grizzly bear conservation strategy. Members of the interagency group may include Montana Fish, Wildlife and Parks; U.S. Fish and Wildlife Service; U.S. Park Service; U.S. Forest Service; APHIS-Wildlife Services; U.S. Geological Survey; U.S. Bureau of Land Management; Blackfeet Tribe, and the Confederated Salish and Kootenai Tribes.

**non-denning season** the time period when grizzly bears typically are not hibernating:

- west side of the Continental Divide: from 1 April through 30 November.
- east side of the Continental Divide: from 16 April through 30 November.

**Northern Continental Divide Ecosystem** a region identified in the Grizzly Bear Conservation Strategy encompassing about 27.3 million acres of land in western and central Montana that is one of five areas in the lower 48 states where grizzly bear populations occur.

**Northern Continental Divide Ecosystem (NCDE) Coordinating Committee** an interagency group that evaluates implementation of the NCDE Grizzly Bear Conservation Strategy, promotes the exchange of

data and information about the NCDE grizzly bear population among agencies and the public, and makes recommendations to the management agencies regarding implementation of the strategy. Members of the interagency group may include Montana Fish, Wildlife & Parks; U.S. Fish & Wildlife Service; U.S. National Park Service; U.S. Forest Service; U.S. APHIS Wildlife Services; U.S. Geological Survey; U.S. Bureau of Land Management; the Blackfeet Tribe; and the Confederated Salish and Kootenai Tribes.

**open motorized route density** a moving window analysis calculation that applies to the primary conservation area portion of the NCDE and includes Federal, State, and Tribal roads and motorized trails that are open to wheeled motor vehicle use by the public for any part of the non-denning season. *Note*: Motorized routes closed only by sign or order are considered to be open for purposes of this calculation. See also **moving window analysis**.

**primary conservation area** an area identified in the NCDE Grizzly Bear Conservation Strategy to be managed as a source area for the grizzly bear population, where continuous occupancy by grizzly bears would be maintained. Habitat within the primary conservation area would receive the most stringent protection. The primary conservation area is the same area as the NCDE grizzly bear recovery zone identified in the Recovery Plan (http://www.fws.gov/mountain-prairie/species/mammals/grizzly/ [U.S. Fish and Wildlife Service 1993]).

**project** an organized effort to achieve an outcome on National Forest System lands identified by location, tasks, outputs, effects, times, and responsibilities for execution (36 CFR 219.19).

**project (in grizzly bear habitat in the NCDE)** a project in grizzly bear habitat in the NCDE, for purposes of the motorized access standards and guidelines in the primary conservation area of the NCDE, refers to any temporary activity requiring construction of new roads, temporary roads, reconstruction or opening of restricted roads during the non-denning season, if such use exceeds administrative use levels (see **administrative use**). Activities involving recurring helicopter use (see **recurring helicopter use**) are also considered to be a project.

**recurring helicopter use** a type of helicopter flight that involves multiple trips/passes each day consisting of low-altitude (< 500 m above-ground-level) flights that continues for a duration longer than 48 consecutive hours.

**road** a motor vehicle route more than 50 inches wide, unless identified and managed as a trail. (36 CFR 212.1, FSM 7705):

1. decommissioned: The stabilization and restoration of an unneeded road to a more natural state (36 CFR 212.1). Decommissioned roads do not count towards Total Motorized Route Density as long as they meet the definition of impassable.
2. forest road or trail: A route wholly or partly within or adjacent to and serving the National Forest Service (NFS) that is necessary for the protection, administration, and utilization of the NFS and the use and development of its resources (36 CFR 212.1 – Definitions)
3. impassable: A road that has been treated in such a manner that the road is blocked and there is little resource risk if road maintenance is not performed on a regular basis (self-maintaining).These roads are not counted in the total motorized route density as long as the road (generally the first 50 to 300 feet) has been treated to make it inaccessible to wheeled motorized vehicles during the non-denning season. Roads may become impassable as a result of a variety of means, including but not limited to one or more of the following: natural vegetation growth, road entrance obliteration, scarified ground, fallen trees, boulders, culvert or bridge removal, etc. Impassable roads may remain on the inventoried road system if use of the road is anticipated at

some point in the future. Some, but not all, roads placed in intermittent stored service may be impassable. [GBCS]

4. intermittent stored service/intermittent service road, closed to traffic: The road is in a condition that there is little resource risk if maintenance is not performed.
5. maintenance level: A term for the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria (Forest Service Handbook 7709.59, 62.32)
   Level 1: These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns.

   Level 2: Assigned to roads open for use by high clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations.

   Level 3: Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities

   Level 4: Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds

   Level 5: Assigned to roads that provide a high degree of user comfort and convenience.
6. National Forest System: A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority (36 CFR 212.1)
7. temporary: A road necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road and that is not included in a forest transportation atlas (36 CFR 212.1). In the NCDE primary conservation area, temporary roads will meet the definition of impassable when no longer needed. [GBCS]

**running average** a method for computing the average of a stream of numbers for a specified period. A 10-year running average computes the mean for the values in the current year plus the previous 9 years. A running average is commonly used with time series data to smooth out short-term fluctuations and highlight longer-term trends or cycles.

**secure core (grizzly bear)** an area of the NCDE primary conservation area 500 meters or more from (1) a route open to public wheeled motorized use during the grizzly bear non-denning season, (2) a gated route, or (3) a route closed only with a sign, that is greater than or equal to 2,500 acres in size. Roads restricted with physical barriers (not gates), decommissioned roads, impassable roads, temporary roads, over-the-snow motorized routes/areas, and non-motorized trails are allowed within secure core, unless otherwise restricted (e.g., by other national forest plan direction).

**total motorized route density** a moving window analysis calculation that applies to the primary conservation area portion of the NCDE and includes Federal, State, and Tribal roads and motorized trails that do not meet the definition of an impassable road. See also **moving window analysis**.

**zone 1** an area surrounding the grizzly bear primary conservation area in the NCDE, where the intent is to maintain occupancy by grizzly bears, but at expected lower densities than inside the primary conservation area. Zone 1 also includes two demographic connectivity areas.

**zone 2** an area adjacent to the grizzly bear zone 1 and/or zone 3 in the NCDE, where grizzly bears, particularly males, would have the opportunity to move between the NCDE and adjacent ecosystems. The

intent of the zone 2 area is to allow for resource management and recreational opportunities while responding to grizzly bear-human conflicts with appropriate management actions.

**zone 3** the area that primarily consists of areas where grizzly bears do not have enough suitable habitat to support population growth. The intent is that grizzly bear occupancy is not actively discouraged in zone 3 and the management emphasis is on conflict response.

# Appendix 3: Comparison of Existing Forest Plan Direction and Proposed NCDE Amendments

# Introduction

This document contains detailed information for the purposed of ESA Section 7 consultation showing current forest plan management direction for the amendment forests, and the changes that would be made under the proposed amendment. Forest plan components include desired conditions, standards, guidelines, and monitoring items.

The full text of the forest plan language and a glossary of terms that would be incorporated into the revised Flathead Forest Plan and in the amended Helena, Kootenai, Lewis and Clark, and Lolo Forest Plans under the proposed action modified alternative is found in appendix 3.

The draft NCDE grizzly bear conservation strategy identified a subset of resource management activities that need to be coordinated with grizzly bear habitat needs to support the recovered status of the grizzly bear population. These are: motorized access and secure core, developed recreation sites, livestock grazing, vegetation management, and minerals and energy development. **Only the management direction applicable to this subset of resource management programs is included in this comparison.**

For each national forest in turn, the current forest plan language that specifically pertains to grizzly bear habitat management is presented. The column identified as alternative 1 directly quotes from the existing forest plan. The second column states whether the existing direction would be retained, added to, or would be replaced. If it would be added to or replaced, a specific reference to the forest plan component (e.g., NCDE-DC-WL-01) is given.

# 1. Helena National Forest

## Current forest plan component and changes under the proposed amendment

Table 4-1 presents the forest plan components pertaining to grizzly bear habitat management that would be included in the Helena National Forest Plan under the proposed amendment. The Helena National Forest contains land within the primary conservation area (PCA), zone 1, and zone 2.

**Table 3-1. Helena National Forest (HNF) comparison of existing forest plan components and changes under the proposed amendment**

| HNF Resource | Current Forest Plan | Proposed amendment |
|---|---|---|
| Wildlife and Fish | Management will emphasize meeting the recovery target of 18 grizzly bears on the essential habitat, and the maintenance or enhancement of elk and cold water fish habitat throughout the Forest. Programs will also be conducted to provide habitat for small game, furbearers and other existing wildlife and fish species<br>.<br>To achieve grizzly bear objectives the emphasis in the Regional action plan calls for coordination with range management, outfitters and guides, public information programs with hunters, and law enforcement to curtail illegal killing of bears (page II-4). | *Modify first paragraph:* Management will emphasize recovery of the grizzly bear, and the maintenance or enhancement of elk and cold water fish habitat throughout the Forest. Programs will also be conducted to provide habitat for small game, furbearers and other existing wildlife and fish species.<br>*Remove the second paragraph.* |
| Wildlife and Fish | Desired future condition of the forest - see pp. II-11 to II-13 | Add NCDE-DC-WL-01, 02 & 03.<br>*Add* NCDE-DC-AR-01, 02 & 03.<br>*Add* NCDE-DC-VEG-01 & 02.<br>*Add* NCDE-DC-GRZ-01.<br>*Add* NCDE-DC-SFP-01.<br>*Add* NCDE-DC-MIN-01.<br>*Add* NCDE- HNF Zone1-DC-01, NCDE-HNF Zone 1&2_DC-02.<br>Add KNF Zone 1-DC-02.<br>Add LNF Zone 1-DC-02. |
| Wildlife and Fisheries: Big Game | Implement an aggressive road management program to maintain or improve big game security (p. II-17).<br>Roads will be managed during the general big game hunting season to limit open road densities. (p. II-18) | *No change.* |
| Threatened and Endangered (T&E) Species: Grizzly Bear | Helena Forest Plan p. II-19<br>Grizzly bear -- Apply the guidelines in Appendix D to the Management Situation 1 and 2 (referred to essential and occupied prior to 1984) grizzly bear habitat on the Forest (see map in Appendix D).<br>Initiate field studies in undesignated areas known to be used by grizzlies, to determine if the areas should be designated as grizzly habitat. Until sufficient evidence is available to determine the status of these areas, manage them according to Appendix E, Grizzly Management Guidelines Outside of Recovery Areas. | *Replace first paragraph with* NCDE-STD-WL-01.<br>*Add* NCDE-STD-WL-02, NCDE-STD-WL-03, NCDE-GDL-WL-01, NCDE-GDL-WL-02 and NCDE-GDL-WL-03.<br>*Remove the second paragraph.* |

| HNF Resource | Current Forest Plan | Proposed amendment |
|---|---|---|
| Threatened and Endangered (T&E) Species: Grizzly Bear | In occupied grizzly habitat, to minimize man-caused mortality the open road density will not exceed the 1980 density of *0.55* miles per square mile, which was determined to have little effect on habitat capability. | *Remove this standard*. [Superseded by NCDE-STD-AR-01 through 04, NCDE-GDL-AR-01 and NCDE-GDL-AR-02 (which apply to PCA); and NCDE-HNF Zone1-STD-01 (which applies to zone 1).] |
| Threatened and Endangered (T&E) Species: Grizzly Bear | Forest Plan Appendix D, Guidelines for Management of Grizzly Bear Habitat | *Replace content (from 1986 IGBG) with map and description of PCA, zone 1 and zone 2.* |
| Threatened and Endangered (T&E) Species: Grizzly Bear | Forest Plan Appendix E, Grizzly Bear Management Outside of Recovery Areas | *Remove.* |
| Facilities. Road Management | Helena Forest Plan Forest-wide Standards p. II-31<br>1. The Helena National Forest will generally be open to vehicles except for roads, trails and areas that may be restricted. (See Forest Visitor Map for specific information). The Forest Road Management Program will be used to review, evaluate, and implement the goals and standards of the management areas in the Forest Plan with regard to road, trail, and area wide motorized vehicle use.<br>2. Road management decisions will be based on user needs, public safety, resource protection, and economics. Most existing roads will be left open. But most *new* roads will be closed, at least during critical periods for big game. The criteria….<br>3. The travel restrictions will be reviewed annually and revised as necessary to meet the goals and objectives of the Forest Plan.<br>4. Enforcement of the Road Management Program will be a high priority. Weekend patrolling, signing, gating, obliterating unnecessary roads, and public education will be used to improve enforcement. Enforcement will he coordinated with the MFWP and other State and local agencies. | *Retain existing standards.*<br>*Add* NCDE-STD-AR-01 through NCDE-STD-AR-04, and add NCDE-GDL-AR-01 & 02 (all apply to PCA).<br>*Add* NCDE-HNF Zone 1-STD-01 (which applies to zone 1). |
| Developed Site | Helena Forest Plan Forest-wide Standards p. II-14<br>New campgrounds and other developed recreation facilities, such as boat ramps or picnic areas, will generally not be constructed. Continue to maintain existing developed sites, but emphasize providing dispersed recreation opportunities. Removal of existing sites may be necessary in some cases, due to site deterioration or excessive maintenance cost. | *Retain existing standard.*<br>*Add* NCDE-STD-AR-05 through NCDE-STD-AR-08 and NCDE-GDL-AR-03 (all apply to the PCA). |

| HNF Resource | Current Forest Plan | Proposed amendment |
|---|---|---|
| Grazing | Helena Forest Plan Forest-wide Standards p. II-22<br>1. Riparian condition within livestock allotments will be mapped and become part of the Allotment Management Plan. Where analysis shows range resource damage, the cause will be identified and corrective action will be initiated through an allotment management plan.<br>2. Chemical spraying should not be used on sagebrush control projects if other control methods are feasible.<br>3. Best management practices (BMPs) will be used to minimize livestock damage to lakeside soils, streamsides, and other fragile areas.<br>4. Allotment management plans will specify the utilization standards of key plant species needed to protect the soil and water quality. Allowable forage utilization of these plants should be based on local range conditions, soil stability, and known individual plant requirements. The guides for allowable utilization of key species, by condition classes, are in the Range Management Handbook (FSH 2209.21).<br>5. Allotment Management Plans will be developed using the interdisciplinary process. | *Retain existing Range standards.*<br>*Add* NCDE-STD-GRZ-01 through 06 and add NCDE-GDL-GRZ-01 and NCDE-STD-GRZ-02 (all apply to the PCA). |
| Revegetation | Helena Forest Plan Forest-wide Standards p. II-23<br>1. Seeding will be done in a timely manner on disturbed areas, to prevent erosion and to achieve best revegetation results.<br>2. Seeding mixtures of native plants (naturally occurring) should be used, if practical, in all revegetation projects greater than two acres. On smaller disturbances, the responsible official may authorize the use of exotic species.<br>3. Seeding guidelines, based on elevation, soil type, parent material, habitat type, and reasonable cost, are listed in Appendix F. | *Retain existing revegetation standards*.<br>[Refer to NCDE-GDL-WL-03 regarding seed mixes in the PCA and zone 1.] |
| Timber | Helena Forest Plan Forest-wide Standards p. II-23 and II-24<br>1. Silvicultural examinations and prescriptions will be required before any timber manipulation or silvicultural treatment takes place. Exceptions include cutting of trees that block vision along roads, cutting hazard trees, clearing right-of-way, clearing for mineral development, minor and incidental amounts of free use, and cutting personal firewood. Final determination of what silvicultural system will be used for a particular project will be made by a certified silviculturist after an on-the-ground site analysis. This site specific analysis will determine the appropriate even or un-even age silvicultural system that best meets the goals and objectives of the management area. Standards for applying all silvicultural systems, as well as supporting research references are in the Northern Region guide (June 10, 1983). In addition, broad guidelines are found in Appendix B and M. Even-aged | *Retain existing Timber standards.*<br>*Add* NCDE-GDL-VEG-01 through 05 (all apply to the PCA). |

| HNF Resource | Current Forest Plan | Proposed amendment |
|---|---|---|
| | management methods will be used only where it is determined to be appropriate to meet objectives. Clearcutting will be used only where it is the optimum method.<br>2. Tree improvement will be conducted in accordance with the current Regional and Forest level tree improvement plans<br>3. Transportation plans and logging systems must be designed jointly to provide for long-term stand management, with full consideration given to topography and slope, the overall economic efficiency of roading and yarding costs, and the needs of other resources.<br>4. Timber stand openings created by even-aged silvicultural systems will normally be 40 acres or less. Creation of larger openings will require a 60-day public review and Regional Forester approval. Exceptions are listed in the Northern Regional Guide. | |
| Special Forest Products | -- | *Add* NCDE-STD-SFP-01. [This is regarding apiaries; there is no such section in the existing Forest Plan.] |
| Minerals-General | Helena Forest Plan Forest-wide Standards (p. II-26)<br>3. Access for development of locatable and leasable minerals will be allowed on a case-by-case basis. Access should he directed toward minimizing resource impacts and be coordinated with other land uses. | *Retain existing standard.*<br>*Add* NCDE-STD-MIN-01 through 07 *and add* NCDE-GDL-MIN-01 through 06 (all apply to locatable and leasable minerals in the PCA and zone 1). |
| Locatable Minerals | (p. II-27)<br>1. Consistent with the Mining and Mineral Policy Act of 1970, continue to encourage the responsible development of mineral resources on National Forest lands. Concurrently, require mitigation measures to protect surface resources.<br>2. Provide guidance to miners and prospectors for planning reclamation and to minimize environmenta1 damage.<br>7. Following mineral development the Forest Service will require reclamation of surface disturbance to prevent or control on- and off- site damage. Reclamation includes, but is not limited to:<br>a. Control of erosion and landslides.<br>b. Control of water runoff.<br>c. Isolation, removal, or control of toxic materials.<br>d. Reshaping and revegetation of disturbed areas.<br>e. Rehabilitation of fisheries and wildlife habitat. | *Retain existing Locatable Minerals standards.* |
| Locatable Minerals | Amendment 19: Withdrawal of areas for locatable minerals on the Lincoln Ranger District | *Retain existing standards in Amendment 19.* |
| Locatable Minerals | Saleable Minerals Forest-wide Standards (p. II-28)<br>1. Common variety mineral permits will be considered on a case-by-case basis and will be issued only if consistent with the management area goals. | *Retain existing Saleable Minerals standard.* |

| HNF Resource | Current Forest Plan | Proposed amendment |
|---|---|---|
| Leasable Minerals - Oil and Gas Leasing Availability and Lease Stipulations | Helena Forest Plan Amendment 13 (p. II-28)<br>Helena Forest lands that are unavailable for oil and gas leasing are Wilderness Areas (P-1 and P-2 management areas), Forest Plan recommended Wilderness (P-3 management areas), the Elkhorns Wildlife Management Unit and the Helena City Municipal Watershed (Ten Mile drainage above the city water treatment plan). All other Forest lands with Federal mineral ownership are available for lease and will be recommended to the BLM for issuance. The recommendation will include appropriate stipulations as determined in the ROD for the "Helena National Forest and Deerlodge National Forest portion of the Elkhorns Oil and Gas Leasing EIS" and displayed as the new Appendix N of the Forest Plan. | *Retain this standard.*<br>Add NCDE-STD-MIN-08 (applies to leasable minerals in the PCA) |
| Leasable Minerals - Oil and Gas Leasing Availability and Lease Stipulations | Helena Forest Plan Amendment 13 (p. II-28)<br>No Surface Occupancy is allowed in MS-1 grizzly bear habitat pursuant to the IGBGs and if considered important to its conservation, as outlined in an approved grizzly bear conservation strategy, following a change in legal status under the Endangered Species Act.<br>No Surface Occupancy would also applied to overlapping occupied denning and summer habitat in MS-2.<br>Timing limitations would apply to grizzly bear denning areas in MS-2 (October 15 to April 15) and spring habitat in MS-2 (April 1 to June 30). | *Replace these standards with NCDE-STD-MIN-08 (which applies to PCA).* [See also NCDE-STD-MIN-05 which applies to the PCA and zone 1.] |
| Seismic Exploration | Helena Forest Plan (p. II-28)<br>An environmental analysis will be completed for each application. A prospecting permit will be issued on a case by case basis and will contain stipulations designed to coordinate surface resource values. The following apply where appropriate:<br>a. Water quality and quantity: Stipulations may be issued to limit activities within 100 feet of all streams, lakes, springs, and ponds.<br>b. Threatened and endangered species habitat: Stipulations will be issued to protect threatened and endangered species by limiting activities during critical periods, and protecting important habitat elements.<br>c. Nongame habitat: Stipulations may be used to limit surface use as a coordination and/or mitigation measure for species listed in State of Montana, Species of Special Interest and Concern. (The State species list is part of the Wildlife Planning Records.)<br>d. Big game habitat: To protect key areas for big game (i.e., winter range, summer concentration habitats, calving areas, lambing areas, big game travel routes, etc.), stipulations may be used during critical periods. | *Retain existing Seismic Exploration standards.*<br>[See NCDE-STD-MIN-05 & 06, and NCDE-GDL-MIN-01 & 03.] |
| Monitoring | Wildlife C6. Grizzly bear habitat effectiveness/population (habitat diversity, open road density). (p. IV-8) | *Replace with* NCDE-MON-01 and NCDE-MON-07 |
| Monitoring | Recreation A1. Actual use and condition of developed recreation facilities. (p. IV-6) | *Retain and add* NCDE-MON-02. |
| Monitoring | Range D2. Allotment management planning and update. (p. IV-10) | *Retain and add* NCDE-MON-03 and NCDE-MON-10. |

| HNF Resource | Current Forest Plan | Proposed amendment |
|---|---|---|
| Monitoring | Minerals G1. Forest Service land uses that may have an effect on minerals activities; minerals activities that have an effect on surface resources. (p. IV-16) | *Retain and add* NCDE-MON-04. |
| Monitoring | Facilities L2. Road management. Ensure that assumptions are valid concerning yearlong closures and seasonal closures on collector roads and local roads. (p. IV-17). | *Retain and add* NCDE-MON-01, NCDE-MON-05 and NCDE-MON-06. |
| Additional Requirements, Helena National Forest | In 2006, U.S. Fish and Wildlife Service administratively amended the previous (1985) Biological Opinion and considered potential impacts of continued implementation of the Helena National Forest Plan on bears that occur both inside and outside the NCDE. The Incidental Take Statement includes the following terms and conditions, which are required in order to be exempt from the taking prohibition of the Endangered Species Act: | *The 2006 Biological Opinion would be superseded by the consultation on this forest plan amendment*. |
| | Within the recovery zone, allow no net increase in open and total motorized access route densities and no net decrease in security core in all three of the grizzly bear subunits. | [See NCDE-STD-AR-02.] |
| | Through the travel management planning process, within five years bring the Red Mountain subunit to the following access conditions: open motorized access route density less than or equal to 22 percent and security core greater than or equal to 68 percent. | |
| | Outside of the recovery zone, the Forest will consult the Service if a net increase in permanent system roads exceeds 4 linear miles during the 5-year period succeeding this incidental take statement. Decommissioning of permanent system roads contributes to decreasing the net increase. | |
| | Allow no new sheep allotments on the Forest within the NCDE recovery zone. | (See NCDE-STD-GRZ-04 and NCDE-STD-GRZ-03.) |
| | Include a clause in all grazing permits that occur within the action area requiring the permittee to notify the Forest of any grizzly bear depredation on livestock or conflicts between grizzly bears and livestock, even if the conflict did not result in the loss of livestock within 24 hours of discovery. The Forest shall work with Montana Fish, Wildlife and Parks and Wildlife Control personnel to determine the appropriate action. | |
| | Include a clause in all grazing permits that occur within the action area requiring the permittee to notify the Forest of any livestock losses, regardless of the cause, within 24 hours of discovery. Agency personnel and the permittee would then jointly determine how to properly treat or dispose of livestock carcasses so as to eliminate any potential attractant for bears | |

# 2. Kootenai National Forest

## Current forest plan components and changes under the proposed amendment

Table 3-2 presents the forest plan components pertaining to grizzly bear habitat management that would be included in the Kootenai National Forest Plan under the proposed amendment. The Kootenai National Forest contains land in the primary conservation area (PCA) and in zone 1, which includes the Salish demographic connectivity area (DCA).

Note that the amendment would apply only to portions of the Kootenai National Forest that are within the NCDE, and not to those portions that are within the Cabinet-Yaak grizzly bear recovery area.

**Table 3-2. Kootenai National Forest (KNF) comparison of existing forest plan components and proposed amendment**

| KNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| Wildlife | Desired Conditions (pp. 28-29)<br>FW-DC-WL-01. Nests and den sites and other birthing and rearing areas for terrestrial threatened, endangered, proposed, or sensitive species are relatively free of human disturbance during the period they are active at these sites. Individual animals that establish nests and den sites near areas of pre-existing human use are assumed to be accepting of that existing level of human use at the time the animals establish occupancy. | *No change.* |
| Wildlife | FW-DC-WL-02. A forestwide system of large remote areas is available to accommodate species requiring large home ranges and low disturbances, such as some wide-ranging carnivores (e.g., grizzly bear). | *No change.* |
| Wildlife | FW-DC-WL-03. Recovery of the terrestrial threatened and endangered species is the long-term desired condition. Foraging, denning, rearing, and security habitat is available for occupation. Populations trend toward recovery through cooperation and coordination with USFWS, state agencies, other federal agencies, tribes, and interested groups. | *No change.* |
| Wildlife | FW-DC-WL-04. All grizzly bear management units have low levels of disturbance to facilitate denning activities, spring use, limit displacement, and reduce human/bear conflicts and potential bear mortality. Spring, summer, and fall forage is available for the grizzly bear. | *No change.*<br>*Add* NCDE-DC-WL-03. |
| Wildlife | FW-DC-WL-05. Recovery of the grizzly bear is promoted by motorized access management within the KNF portion of the Northern Continental Divide Ecosystem and Cabinet-Yaak recovery zones. | *No change.* |

<table>
<tr><th>KNF Resource</th><th>Current forest plan</th><th>Proposed amendment</th></tr>
<tr><td>Wildlife</td><td>FW-DC-WL-17. Forest management contributes to wildlife movement within and between national forest parcels. Movement between those parcels separated by other ownerships is facilitated by management of the National Forest Service portions of linkage areas identified through interagency coordination. Federal ownership is consolidated at these approach areas to highway and road crossings to facilitate wildlife movement.</td><td>No change.<br>Add NCDE-KNF Zone 1-DC-02.</td></tr>
<tr><td>Wildlife</td><td>--</td><td>Add NCDE-DC-WL-01, NCDE-DC-WL-02 and NCDE-WL-03.</td></tr>
<tr><td>Wildlife</td><td>Wildlife Standards (p. 30) FW-STD-WL-03. Within the Kootenai portion of the NCDE recovery zone, bear management subunits shall maintain or improve the access and habitat parameters as shown in table 6. Site-specific motorized access densities and security core habitat are developed at the project level in consultation with the USFWS and through appropriate public involvement and National Environmental Policy Act procedures.<br><br>Table 6. NCDE Recovery Zone Bear Management Units (BMUs).
<table>
<tr><th>Bear Mgt Unit Subunit</th><th>Open Motorized Route Density 1</th><th>Total Motorized Route Density 2</th><th>Security Core Area</th></tr>
<tr><td>Krinklehorn</td><td>≤18%</td><td>≤11%</td><td>≥75%</td></tr>
<tr><td>Therriault</td><td>≤23%</td><td>≤10%</td><td>≥71%</td></tr>
</table>
[1] The standard for OMRD and TMRD is to be ≤ the percentage listed in the table above. This is calculated based on the percentage of the BMU with an OMRD ≥1 mi/mi2 and TMRD ≥2 mi/mi2. OMRD and TMRD are defined in the glossary.<br>[2] The standard for Core is to be ≥ the percentage listed in the table. This is calculated based on the definition of “grizzly bear core habitat” in the glossary.</td><td>Retain this standard.<br>[Note: This is the baseline (adjusted through Section 7 consultation) in relation to NCDE-STD-AR-02]<br>Add NCDE-STD-WL-03.</td></tr>
<tr><td>Wildlife</td><td>FW-STD-WL-04. Permits and operating plans (e.g., special use, grazing, and mining) shall specify sanitation measures and adhere to the forestwide food/attractant storage order in order to reduce human/wildlife conflicts and mortality by making wildlife attractants (e.g., garbage, food, livestock carcasses) inaccessible through proper storage or disposal.</td><td>Retain this standard and add NCDE-STD-WL-02.<br>[Note: FW-STD-WL-04 is broader than NCDE-STD-WL-02 which applies to the NCDE PCA and zone 1.]</td></tr>
<tr><td>Wildlife</td><td>FW-STD-WL-05. No grooming of snowmobile routes in grizzly bear core habitat in the spring after April 1 of each year.</td><td>Retain this standard.</td></tr>
<tr><td>Wildlife</td><td>--</td><td>Add NCDE-STD-WL-01.</td></tr>
<tr><td>Wildlife</td><td>Wildlife, Guidelines (pp. 31-32)<br>FW-GDL-WL-01. Grizzly Bear. Management activities should avoid or minimize disturbance in areas of predicted denning habitat during spring emergence (April 1 through May 1).</td><td>Retain this guideline. and add NCDE-STD-AR-08 (which applies to the PCA)</td></tr>
<tr><td>Wildlife</td><td>FW-GDL-WL-15. Grizzly bear. Elements contained in the most recent “Interagency Grizzly Bear Guidelines,” or a conservation</td><td>Revise as shown in bold:<br>Elements contained in the most</td></tr>
</table>

| KNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| | strategy once a grizzly bear population is delisted, would be applied to management activities. | recent "Interagency Grizzly Bear Guidelines," or a conservation strategy incorporated into the Forest Plan, would be applied to management activities. |
| Wildlife | -- | *Add* NCDE-GDL-WL-01 through 03. |
| Access and Recreation | Access and Recreation (pp. 33-35)<br>FW-DC-AR-01. Quality, well-maintained recreation facilities exist at key locations to accommodate concentrations of use, enhance the visitor's experience, and protect the natural resources of the area. Day use access is available for relaxation, viewing scenery and wildlife, and for water and snow-based play. Recreation rental cabins and lookouts provide safe, comfortable, overnight facilities that allow visitors to experience and learn about the rich history of the area. Dispersed camping resource concerns, activity conflicts, or over-use. Food and garbage storage do not contribute to conflicts between recreation users and wildlife. | *Retain this desired condition* and add NCDE-DC-AR-02 which applies to the PCA. |
| Access and Recreation | FW-DC-AR-07. A transportation system is in place that provides safe and efficient public and administrative access to the Forest for recreation, special uses, forest resource management, and fire management activities. It is efficiently maintained, environmentally compatible, and responsive to public needs and desires. The transportation system and its use have minimal impacts on resources including threatened and endangered species, sensitive species, heritage and cultural sites, watersheds, and aquatic species. Newly constructed or reconstructed roads do not encroach into streams and riparian areas in ways that impact channel function, geometry or sediment delivery. Roads in intermittent stored service pose minimal risks to water quality and aquatic ecosystems. Drainage structures have a minimal risk of failure, and provide adequate drainage that prevents accelerated runoff, erosion, and sediment delivery to streams. In addition, stream crossings provide for passage of aquatic organisms. Unauthorized roads and trails are no longer created. | *Retain this desired condition and add* NCDE-DC-AR-01 (which applies to the PCA). |
| Access and Recreation | -- | *Add* NCDE-STD-AR-01 through 04 and add NCDE-GDL-AR-01 through 04 (all apply to the PCA). |
| Access and Recreation | -- | Add NCDE-STD-AR-07 (which applies to ski areas within the PCA) |
| -- | -- | *Add* NCDE-KNF Zone1-DC-01 and NCDE-KNF Zone 1-DC-02 and add NCDE-KNF Zone1-STD-01 & NCDE-KNF Zone 1-STD-02 (apply to zone 1 and the Salish DCA). |
| Grazing | Grazing (p. 38)<br>FW-DC-GRZ-01. Grazing occurs at sustainable levels in suitable locations while protecting resources.<br>FW-DC-GRZ-03. Vacant allotments are evaluated and may be closed when there is either a lack of use, a shortage of forage | *Retain existing Grazing Desired Condition statements*, and add NCDE-DC-GRZ-01 (which applies in the PCA). |

| KNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| | for a viable allotment, or the likelihood of a significant resource conflict. | |
| Grazing | -- | *Add* NCDE-STD-GRZ-01 through 06 and add NCDE-GDL-GRZ-01 & 02 (all apply to the PCA). |
| Timber | Timber (pp. 38-39)<br>FW-DC-TBR-01. Production of timber contributes to ecological, social, and/or economic sustainability, and associated desired conditions. A sustainable mix of timber products (including both sawtimber and non-sawtimber) is offered under a variety of harvest and contract methods in response to market demand. Salvage of dead and dying trees captures as much of the economic value of the wood as possible while retaining the amount needed for wildlife habitat, soil productivity, and ecosystem functions. | *Retain existing Timber Desired Condition statement* and add NCDE-DC-VEG-01 & 02 (which apply to the PCA). |
| Vegetation | -- | Add NCDE-GDL-VEG-01 through 05 (all apply to the PCA). |
| Special Forest Products | -- | Add NCDE-DC-SFP-01 and add NCDE-STD-SFP-01 (which apply to the PCA). |
| Minerals | Minerals (p. 39)<br>FW-STD-MIN-01. Locatable mineral development is not allowed in areas withdrawn from mineral entry. (Refer to appendix D for areas withdrawn from mineral entry.) | Add NCDE-DC-MIN-01. |
| Minerals | -- | *Add* NCDE-STD-MIN-01 through 07 (all apply to the PCA and zone 1).<br>Add NCDE-STD-MIN-08 (which applies to the PCA). |
| Minerals | -- | *Add* NCDE-GDL-MIN-01 through 06 (all apply to the PCA and zone 1). |
| Monitoring | Monitoring (p. 100)<br>MON-FLS-01-01: Grizzly Bear: Progress towards achieving and maintaining standards for percent core area, OMRD, and TMRD within the Recovery Zones (see monitoring requirements for the Grizzly Bear Access Amendment in appendix B). | *Add* NCDE-MON-01, NCDE-MON-05, and NCDE-MON-08. |
| Monitoring | Monitoring – Access and Recreation (p. 102)<br>MON-AR-01-01: Number and type of recreation sites.<br>MON-AR-01-02: Number of Persons at One Time | *Add* NCDE-MON-02. |
| Monitoring | Monitoring – Grazing | *Add* NCDE-MON-03 and NCDE-MON-10. |
| Monitoring | Monitoring – Minerals and Energy Development | *Add* NCDE-MON-04. |
| Monitoring | -- | *Add* NCDE-MON-06. |

| KNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| Additional Requirements | Additional Requirements, Kootenai National Forest<br>In 2013, USFWS issued a Biological Opinion on the effects of the revised forest plan on grizzly bears in the CYE and the NCDE. The Incidental Take Statement includes the following terms and conditions, which are required in order to be exempt from the taking prohibition of the Endangered Species Act. | *The 2013 BO will be amended by the consultation on the NCDE grizzly bear amendment* |
| Additional Requirements | The Forest shall conduct monitoring and reporting of incidental take as follows:<br>1) By April 15 each year, the KNF shall submit an annual report to the Service that details the progress made toward achieving and maintaining the standards for percent Core Area, OMRD, and TMRD within the Recovery Zones.<br>2) The annual report shall provide an ongoing list detailing the locations, dates, duration, and circumstances for invoking the Access Amendment allowance for entering core area for the purposes of road decommissioning or stabilizations.<br>3) The KNFs shall coordinate with State and Federal agency biologists to collect credible grizzly bear observations that occur outside of the Recovery Zone boundaries and add this information to the 6th-order HUC database for inclusion into the annual report.<br>4) During the first year of implementation of the Revised Forest Plan, the Forest and the Service shall cooperatively develop a plan to monitor the scope and magnitude of late-season snowmobiling (post April 15) as it relates to effects on post-den emergent grizzly bears (see Incidental Take Statement). Within five years of implementation of the Revised Forest Plan, the Forests shall complete a winter travel plan, which will include considerations for grizzly bear and other federally listed species.<br>5) The Forest shall notify the Grizzly Bear Recovery Coordinator or Service's Montana Field Office within 24 hours of any bear-human conflicts that occur on the Forest, regardless of cause or season. | |

# 3. Lewis and Clark National Forest

## Current forest plan components and changes under the proposed amendment

This table presents the forest plan components that are pertaining to grizzly bear habitat management that would be included in the Lewis and Clark Forest Plan under each alternative. The Lewis and Clark National Forest contains land within the primary conservation area (PCA) and zone 3, with negligible amounts in zone 1 (6 acres) and zone 2 (2 acres).

**Table 3-3. Lewis and Clark (L&C) National Forest existing forest plan components and proposed amendment**

| L&C Resource | Alt. 1<br>No Action (current forest plan) | Alt. 2<br>Modified Proposed Action- |
|---|---|---|
| Wildlife and Fish | Forest-wide Objectives, Wildlife and Fish (page 2-5 and 2-6)<br>Management will emphasize the recovery of the endangered gray wolf and threatened grizzly bear on the Rocky Mountain Division and the maintenance of current populations of elk and coldwater fish throughout the Forest. Programs will also be conducted to provide for huntable and trappable populations of small game and furbearers and viable populations of other existing wildlife and fish species. (See Appendices D, E, F, H, I and K.) | *Retain the first paragraph.* |
| Wildlife and Fish | To achieve grizzly bear objectives the emphasis in the Regional action plan calls for coordination with range management, outfitters and guides, public information programs with hunters, and law enforcement to curtail illegal killing of bears (see Appendix J). To improve analytical capabilities on the effect of activities of grizzly bears and their habitat, a computerized cumulative effects model will be developed from this effort and area coordination plans will be prepared to regulate activities in time and space (see Appendix L). | *Remove this paragraph.* |
| Desired Future Condition of the Forest | Desired Future Conditions (pp. 2-18 to 22)<br>--<br>--<br>--<br>--<br>-- | *Add* NCDE-DC-WL-01, NCDE-DC-WL-02 and NCDE-DC-WL-03.<br>*Add* NCDE-DC-AR-01, 02 & 03.<br>*Add* NCDE-DC-VEG-01 & 02.<br>*Add* NCDE-DC-GRZ-01.<br>*Add* NCDE-DC-SFP-01.<br>*Add* NCDE-DC-MIN-01. |
| Wildlife and Fish | Wildlife and Fish Forest-wide Management Standards C-2 (p. 2-23)<br>(5) Participate in the Interagency Wildlife Monitoring/Evaluation Program for the Rocky Mountain Front. The members chartered the program in 1980 to promote better coordination of wildlife studies along the Front. The interagency Program is reviewed in Appendix H. Data gathered through this program is the basis of the grizzly bear management guidelines (Appendix I). The Interagency Grizzly Bear Guidelines will be used to coordinate multiple-use activities with the biological requirements of endangered and threatened species (Appendix V). | *Remove this standard*. |
| Wildlife and Fish | (7) The occupied grizzly bear habitat (all of the Rocky Mountain Division) has been stratified according to "The Guidelines for Management Involving Grizzly Bears in the Greater Yellowstone Ecosystem" (USFS 1979). Appendix K describes this stratification and the management direction based on this stratification. Forest management on occupied grizzly bear habitat | *Replace with* NCDE-STD-WL-01. |

| L&C Resource | Alt. 1<br>No Action (current forest plan) | Alt. 2<br>Modified Proposed Action- |
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| | will comply with this management direction. | |
| Wildlife and Fish | (8) Manage problem grizzly bears in accordance with the "Guidelines for Determining Grizzly Bear Nuisance Status and for Controlling Nuisance Grizzly Bears in the Northern Continental Divide and Cabinet-Yaak Grizzly Bear Ecosystems." This guideline was developed by the Montana Department of Fish, Wildlife and Parks; U.S. Fish and Wildlife Service; Forest Service; National Park Service; Bureau of Indian Affairs; and Border Grizzly Bear Project. It is revised as needed. The document specifies the criteria for accepting nuisance grizzlies and identifies suitable relocation sites. | *Remove this standard. [Note: the referenced document will be revised by the NCDE Conservation Strategy]* |
| Wildlife | -- | *Add* NCDE-STD-WL-02 (applies to the PCA, zone 1 and zone 2).<br>Add NCDE-STD-WL-03 (applies to PCA). |
| Wildlife | -- | *Add* NCDE-GDL-WL-01 through 03. |
| Access and Recreation | Developed Recreation Forest-wide Management Standards A-2 (p. 2-25)<br>(5) Administer provisions of the Endangered Species Act in occupied T&E species habitat (Appendix I). Use the Management Guidelines developed under the Interagency Rocky Mountain Front Wildlife Monitoring/Evaluation Program to avoid or mitigate conflicts between developed recreation and T&E species (Appendix I) | *Retain this standard, except as superseded for grizzly bear by amendment standards..* |
| Access and Recreation | -- | *Add* NCDE-STD-AR-05 through 08 and add NCDE-GDL-AR-03 (all apply to the PCA). |
| Livestock Grazing | Livestock Grazing Forest-wide Management Standards D-4 (p. 2-41)<br>6) Grazing which affects grizzly bears and/or their habitat will be made compatible with grizzly needs or such uses will be disallowed or eliminated. | *Retain this standard.* |
| Livestock Grazing | -- | *Add* NCDE-STD-GRZ-01 through 06 and add NCDE-GDL-GRZ-01 & 02 (all apply to the PCA). |
| Vegetation | Timber Forest-wide Management Standards, Firewood Administration E-2 (p. 2.42)<br>(4) When roads approach diverse complexes of T&E habitat components such as those in the upper end of drainages, they should not be opened to firewood cutting during any season. For roads which enter areas of low vertical relief and limited component diversity, access for firewood cutting is compatible with grizzly bear use as long as the access is prohibited during important use seasons. Firewood cutting should be limited to 2 to 3 years after timber harvest. Then the road should be permanently closed to the public. | *Retain this standard.*<br>*[Note: in the NCDE PCA, this is modified by NCDE-GDL-VEG-01 through 05, as well as by NCDE-STD-AR-02 and 04.].* |
| Timber Harvest | Timber Harvest E-4 (p. 2 46-)<br>The following standards apply to occupied grizzly bear habitat on the Rocky | *Remove standards 14 through 19 and replace with* |

| L&C Resource | Alt. 1<br>No Action (current forest plan) | Alt. 2<br>Modified Proposed Action- |
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| | Mountain Division.<br>(14) Coordinate timber harvest activities with seasonal grizzly habitat use patterns to minimize the disturbance to grizzly bears. This can most easily be accomplished with seasonal restrictions on logging and road building activities.<br>(15) Maintain or improve the production of grizzly food species on harvesting sites. To accomplish this, soil scarification during logging and post-logging treatments will be done to the minimum level necessary to insure timber regeneration.<br>(16) Broadcast burning will be favored over dozer piling in areas where broadcast burning will not adversely affect timber regeneration.<br>(17) Use equipment no bigger than necessary to complete the job.<br>(18) Encourage horse logging where it is feasible because it is generally 'easy on the land' allowing many bear foods to recover rapidly. | guidelines NCDE-GDL-VEG-01 through 05 (which apply in the PCA). |
| Timber Harvest | 19) Maintain escape cover and a degree of isolation for the grizzly. This standard can be met by:<br>• creating irregular borders where possible to provide nearby cover for a great proportion of the cutting unit.<br>• screening clearcuts from the road by a strip of trees between the road and the cut.<br>• maintaining visual cover along streams; around wet areas such as seeps, wet meadows and marshes; along ridgetops; and adjacent to open habitat components such as snowchutes, shrubfields, sidehill parks, and slabrock areas.<br>• retaining stringers of timber that serve as travel routes, as well as feeding sites, along riparian zones, snowchutes, and between adjacent cutting units.<br>• limiting timber harvest activities at or near ridgetops, at drainage heads, and along creek bottoms. These sites are important grizzly travel/feeding areas.<br>• protecting travel corridors, denning areas, or feeding sites.<br>• harvesting timber systematically so as to allow cover, food, and trees time to recover adequately before re-entry. | *Remove standards 14 through 19 and replace with* guidelines NCDE-GDL-VEG-01 through 05 (which apply in the PCA). |
| Special Forest Products | -- | *Add* NCDE-STD-SFP-01. |
| Minerals | Minerals Forest-wide Management Standards, Seismic Exploration G-1 (p. 2- 54)<br>(14) Protect T&E wi1dlife species through compliance with the Endangered Species Act. Use the Interagency Guidelines to avoid or mitigate conflicts with seismic exploration and T&E species (Appendix I). | *Retain this standard.*<br>[*Note: see* NCDE-STD-MIN-05 & 06 specific to grizzly bears, applicable to the PCA and zone 1.] |
| Minerals | Minerals Forest-wide Management Standards; Oil and Gas Leasing, Exploration Drilling Field Development, and Production G-2 (p. 2-57)<br>(9) Protect threatened and endangered species through Section 7 of the Endangered Species Act (consultation procedures), the standard stipulation, the Controlled Surface Use stipulation, timing limitations, and the use of the Interagency Guidelines. An analysis of proposed actions will identify conditions under which activities must be restricted, delayed, or modified to prevent adverse effects on threatened and endangered species and their habitat. | *Retain this standard.*<br>Add NCDE-STD-MIN-08 (which applies to the PCA). |
| Minerals | Minerals Forest-wide Management Standards, Mineral Withdrawal G-3 (p. 2-59)<br>(2) Use withdrawal only where protection is definitely needed and cannot be | *Retain this standard.* |

| L&C Resource | Alt. 1<br>No Action (current forest plan) | Alt. 2<br>Modified Proposed Action- |
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| | achieved through other management options. All National Forest System lands on the Rocky Mountains Division have been withdrawn from entry under the general mining laws. Management area prescriptions for these lands are to be interpreted consistent with this direction. | |
| Minerals | Minerals Forest-wide Management Standard, Locatable and Common Variety Minerals G-5 (p. 2-59).<br>(1) Consistent with the Mining and Mineral Policy Act of 1970, continue to encourage the development of mineral resources on National Forest lands by private enterprise. Activities authorized under Notices of Intent, Plans of Operation, and mineral material permits will contain conditions and specifications appropriate to meet the intent of Standards G-1 and G-2; except, conditions may not be imposed on locatable mineral operations that are contrary to the surface use regulations for locatable minerals (36 CFR 228).<br>(2) Access to valid mining claims is guaranteed under the mining laws. However, the claimant/operator must be able to justify the need for a particular type of access. The type of access approved under 36 CFR 228 will be consistent with the next logical step in the development of the property involved. Access roads for mineral needs will be coordinated with the Forest Transportation Plan. | *Retain these standards.* |
| Minerals | -- | *Add* NCDE-STD-MIN-01 through 07and add NCDE-GDL-MIN-01 through 06 (all apply to the PCA and zone 1). |
| Roads | Facilities Forest-wide Management Standards, Travel Planning L-2 (p. 2-62)<br>(1) The Lewis and Clark National Forest will generally be open to vehicles except for roads, trails, or areas which may be restricted. (See Forest Visitor Map for specific information.)<br>(2) Manage road and trail use to provide public access, public safety, and resource protection, while minimizing environmental and user conflicts.<br>(3) Manage off-road vehicle use to protect the resources, to promote public safety, and to minimize user conflicts. | *Retain the Travel Planning standards*. |
| Roads | Facilities Forest-wide management Standards, Maintenance and Construction of Roads, Trails and Other Facilities L-4 (p. 2-65-71)<br>(1) Road construction will be the minimum density, cost, and standards necessary for the intended need, user safety and resource protection.<br>[The following standards apply to occupied grizzly bear habitat on the Rocky Mountain Division]<br>(33) Administer provisions of the Endangered Species Act in occupied T&E species habitat. Use the Interagency Wildlife Guidelines to avoid or mitigate conflicts between road construction and use and T&E species (Appendix I).<br>(34) Limit new road construction to an absolute minimum to provide isolation and disturbance-free areas for grizzlies. Where new road construction is required:<br>--Roads will be built to the minimum specifications necessary to complete the project.<br>--Roads will avoid wet areas, including stream bottoms, snowchutes, and wet meadows, which are important grizzly feeding sites and travel corridors.<br>--Roads should not bisect known or suspected grizzly travel corridors. When corridors must be entered, cover should be retained for 120 feet on each side of the road.<br>--Public traffic should be restricted on new Forest roads to minimize the | *Retain this standard*.<br>*Remove standards 33 and 34 and replace with* NCDE-STD-AR-01 through 04 and NCDE-GDL-AR-01 & 02 (all apply to the PCA). |

| L&C Resource | Alt. 1<br>No Action (current forest plan) | Alt. 2<br>Modified Proposed Action- |
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| | disturbances to bears.<br>--The initial section of permanently closed roads should be destroyed and planted with shrubs or trees that help maintain the closure and provide cover and/or food.<br>--Implement seasonal or year-round closures on existing or proposed roads if the biological evaluation indicates they are necessary to allow grizzly use of important habitat, to reduce human/bear conflicts, and to meet stated habitat effectiveness objectives. | |
| Monitoring | Monitoring<br>Wildlife (p. 5-10) C-1: Maintain occupied grizzly bear habitat capacity. To be measured and reported annually. | *Replace with* NCDE-MON-01, NCDE-MON-05, NCDE-MON-06. |
| Monitoring | Recreation (p. 5-9 through 10) | *Add* NCDE-MON-02. |
| Monitoring | Grazing (p. 5-12)- | *Add* NCDE-MON-03 and NCDE-MON-10. |
| Monitoring | Minerals (p. 5-15 & 15) | *Add* NCDE-MON-04. |
| Monitoring | Facilities (p. 5-16) | |
| Appendices | Appendix I, Rocky Mountain Front Interagency Wildlife Guidelines. Part B – Species Specific Management Guidelines.<br>Grizzly Bear (p. I-6 to I-8)<br>1. Avoid human activities in identified grizzly bear habitat constituent elements or portions of constituent elements containing specific habitat values during the following seasonal use periods (see data summarization):<br>A. Spring habitat (concentrated use areas): April 1–June 30.<br>B. Breeding areas: May 1–July 15. (Currently identified breeding areas include upper Muddy Creek, the head of Rinkers Creek, the Ear Mountain area, and the head of the North Fork Dupuyer Creek)<br>C. Alpine feeding sites: July 1–September 15.<br>D. Subalpine fir/whitebark pine habitat types: August 1–November 30.<br>E. Denning habitat: October 15–April 15.<br>2. Avoid human activities in Grizzly bear habitat components which provide important food sources during spring and early summer, April 1–July 15.<br>These habitat components include riparian shrub types, *Populus* stands, wet meadows, sidehill parks, and avalanche chutes. Maintain an undisturbed zone of at least 1/2 mile between activities and the edge of these habitat components where many important bear foods occur. | *Remove (superseded by the amendment).* |
| Appendices | 3 Establish flight patterns in advance when activities require the use of he1icopters. Flight patterns should be located to avoid seasonally important grizzly bear habitat constituent elements and habitat components during the designated seasonal use periods. | *Remove*. (Covered under NCDE-STD-MIN-05 & 06.) |

| L&C Resource | Alt. 1<br>No Action (current forest plan) | Alt. 2<br>Modified Proposed Action- |
|---|---|---|
| Appendices | 4. No seismic or exploratory drilling activities should be conducted within a minimum of one mile of den sites during the October 15 - April 15 period (Reynolds, P. E., et al., 1983).<br>5. Seismic permits should include a clause providing for cancellation or temporary cessation of activities, if necessary, to prevent grizzly/human conflicts. | *Remove.* (See NCDE-STD-MIN-05.)<br>*Remove*. (Covered under NCDE-STD-MIN-02.) |
| Appendices | 6. Scheduling of well drilling on adjacent sites, within important grizzly bear use areas, should be staggered to provide a disturbance free area for displaced bears.<br>7. Pipeline construction required for the development of a gas or oil field should be condensed into the shortest time frame possible and subject to seasonal restrictions when conducted in important grizzly bear habitat.<br>8. Field operation centers associated with seismic or oil/gas exploration activities should be placed carefully to avoid seasonally important habitat components or constituent elements. Such placement of sites is necessary in order to avoid direct potential conflicts between man and grizzly bear. | *Remove*. (Covered under NCDE-STD-MIN-05.)<br>*Remove.* (Covered under NCDE-STD-MIN-05.)<br>*Remove.* |
| Appendices | 9. Retain frequent dense cover areas adjacent to roads for travel corridors and security cover necessary to protect important habitat components. Three sight distances are desirable to provide visual security for grizzlies. A sight distance is the average distance at which a grizzly or other large animal is essentially hidden from the view of an observer by vegetation cover. The same security cover guidelines also applies to timber harvest units.<br>10. No off-duty work camps will be allowed within occupied seasonally important constituent elements. | *Remove*. (Covered by NCDE-GDL-MIN-03.)<br>*Remove.* |
| Appendices | 11. Incinerate garbage daily or store in bear proof containers and remove to local landfill dumps daily.<br>12. Commercial activities permitted on public land should be planned and coordinated to avoid conflicts with grizzly bear trapping operations being conducted under the monitoring program. General public use of areas where trapping operations are active will be controlled through appropriate administrative actions by the agencies involved. | *Remove*. (Covered by NCDE-STD-MIN-04.)<br>*Remove*. |
| Appendices | The following are grizzly bear management guidelines specifically oriented toward 1ivestock grazing:<br>1. Livestock grazing on important spring habitat for grizzly bears should be deferred until after July 1.<br>Boneyards and livestock dumps are prevalent along the east front and are frequented by grizzly bears. Ranchers and landowners should be encouraged to place carcasses of dead livestock and garbage on remote areas of their land. Dead cows and calves should be hauled a considerable distance from calving grounds to discourage bears from feeding on carrion and newborn calves.<br>3. Sheep grazing allotments in management situation No. 1, as defined in the Yellowstone Guidelines, on lands administered by government agencies should be eliminated.<br>4. In riparian habits that receive high amounts of bear use, fencing to exclude livestock grazing and trampling may be necessary where livestock turn-out dates-prior to July 1 are allowed. | *Remove*. (Covered under NCDE-STD-GRZ-03, 04, & 05, and NCDE-GDL-GRZ-01 & 02.) |
| Appendices | Appendix K, Grizzly Bear Stratification | *Replace content (from 1986 IGBG) with map and description of PCA and Zones 1and 3.* |

| L&C Resource | Alt. 1<br>No Action (current forest plan) | Alt. 2<br>Modified Proposed Action- |
|---|---|---|
| Appendices | Appendix L, Wildlife Habitat Activity Coordination Analysis Process | *Remove.* |
| Appendices | Appendix V, 1986 Interagency Grizzly Bear Guidelines (Amendment #3 incorporated these into the Plan). | *Remove.* |
| Additional Requirements | Additional Requirements, Lewis and Clark National Forest<br>In 2007, the Birch Creek South travel plan decision was issued, which encompasses 8 bear management subunits. Potential impacts to grizzly bears considered route density and core area as outlined in the Interagency Grizzly Bear Committee (IGBC) Taskforce Report and the Interim Motorized Access Management Guidelines for the NCDE. The decision was to reduce both total and open motorized route densities on National Forest lands in all Subunits. Core area will be increased for all Subunits. The USFWS concurred with the determination that the decision may affect but is not likely adversely affect the grizzly bear. | *Birch Creek South travel plan decision would not be changed by this amendment.* |
| Additional Requirements | In 2008, the Badger-Two Medicine travel plan decision was completed, which encompassed 3 bear management subunits on the Rocky Mountain Ranger District. All 3 Subunits have <75% of their total area on NFS lands. The decision resulted in all 3 Subunits meeting the numeric objectives of the Interim Guidelines for the NCDE. USFWS concurred with the determinations in the BA and Supplement that the decision may affect, but is not likely to adversely affect the grizzly bear. | *Badger-Two Medicine travel plan decision would not be changed by this amendment.* |

# 4. Lolo National Forest

## Current forest plan components and changes under the proposed amendment

This table presents the forest plan components pertaining to grizzly bear habitat management that would be included in the Lolo Forest Plan under each alternative. The Lolo National Forest contains land within the primary conservation area (PCA), zone 1, the Ninemile demographic connectivity area (DCA) and zone 2. The acreage in zone 2 is negligible (38 acres).

**Table 3-4. Lolo National Forest (LNF) existing forest plan components and proposed amendment**

| LNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| Wildlife | Forest-wide Objectives, Resource/Activity Summaries (page II-2)<br>The Plan provides for the recovery of threatened species on the Forest. It regulates human access and use in and through occupied grizzly bear habitat. In addition, tools such as prescribed burning, will be used to enhance food-producing areas and improve habitat. The Plan supports expansions in populations of the endangered peregrine falcon, bald eagle, and gray wolf through Forest goals and standards. | *No change.* |
| Wildlife | Desired Future Condition of the Forest p. II-6 | *Add* NCDE-DC-WL-01, NCDE-DC-WL-02 and NCDE-DC-WL-03.<br>*Add* NCDE-DC-AR-01, 02 & 03.<br>*Add* NCDE-DC-VEG-01 & 02.<br>*Add* NCDE-DC-GRZ-01.<br>*Add* NCDE-DC-SFP-01.<br>*Add* NCDE-DC-MIN-01. |
| Wildlife | -- | *Add* NCDE-LNF Zone1-DC- 01 and NCDE-LNF Zone 1-DC-02. |
| Wildlife | Forest-wide Standards, Wildlife and Fish (p. II-13-14)<br>24. All threatened and endangered species occurring on the Lolo including the grizzly bear, bald eagle, peregrine falcon, and gray wolf will be managed for recovery to nonthreatened status. Forest Service designated essential habitat will provide interim management direction for those species until critical habitat is designated by the Fish and Wildlife Service. Within essential grizzly bear habitat (Management Situation I), the Forest wildlife biologist will establish vegetative management objectives for all projects that involve vegetative manipulation. Outside of Management Situation I, where grizzly bear use is suspected or known to occur on an occasional basis (Management Situation 2), schedule activities so as to not conflict with the grizzly bear. If departures from this standard are deemed necessary, the Forest wildlife biologist will assist in developing treatment alternatives. (Management Situations I and 2 are defined by the Interagency Grizzly Bear Guidelines.) | *Delete the last 3 sentences.* |
| Wildlife | 27. Management practices in essential habitat of threatened and endangered species must be compatible with habitat needs of the species (grizzly bear, gray wolf, bald eagle, and peregrine falcon) consistent with the goal of recovery to nonthreatened status. There are no other known plant or animal species on the | *Retain this standard.* |

| LNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| | Forest that have been identified as threatened or endangered under provisions of the Endangered Species Act of 1973. If and when such habitats are identified, appropriate measures, pursuant to Section 7 of the Endangered Species Act, will be taken to protect the species and its habitat consistent with National goals for species recovery to nonthreatened status. Cooperate with future interagency efforts to recover those species for which recovery goals have not yet been defined. For plant and animal species that are not threatened or endangered, but where viability is a concern (i.e., sensitive species), manage to maintain population viability. Habitat for management indicator species, which include the elk, goshawk, and pileated woodpecker, will be monitored. Elk population data, collected by the Department of Fish, Wildlife, and Parks will be compared against habitat data to test elk/habitat relationships. As monitoring technology becomes available for the goshawk and pileated woodpecker, population trends will be monitored. In the interim, habitat parameters including old-growth acres and condition, and snag densities will be monitored as an indicator of population trend. | |
| Wildlife | -- | *Add* NCDE-STD-WL-01, NCDE-STD-WL-02 and NCDE-DC-WL-03 and add NCDE-GDL-WL-01 through 03 (all apply to the PCA). |
| Recreation | Recreation (p. II-10)<br>7. The Forest Service will not significantly expand the capacity of developed recreation sites on the Lolo National Forest during the next 10-year period. Emphasis will be placed on increasing the use of existing sites by making them usable by a wide segment of society including the elderly and handicapped. Those existing sites receiving low levels of public use or which are not cost effective to operate will be considered for temporary or permanent closure. The private sector and other agencies will be encouraged to provide for increased public needs on National Forest System land and on lands adjacent to the Forest. If and when development proposals are received for expansion of existing or construction of new ski areas, they will be evaluated according to the normal procedures for determining ski area feasibility. The Forest will use the Analysis Procedure for Prioritizing Recreation Projects on the Lolo National Forest (Appendix K) to determine funding for recommended recreation projects. | *Retain this standard.* |
| Access and Recreation | -- | *Add* NCDE-STD-AR-05 through 08, and add NCDE-GDL-AR-03 (all apply to the PCA). |
| Roads | Forest-wide Standards, Roads (p. II-18)<br>52. Manage Forest roads to provide for resource protection, wildlife needs, commodity removal, and a wide range of recreation opportunities. In most areas on the Forest, this will involve leaving some roads open, closing some roads seasonally, and closing other roads on a permanent basis. Generally, arterial and major collector roads will be left open, whereas local roads will generally be closed. Decisions for road management will be based upon public involvement through the Travel Plan revision process. Primary benefits to be considered are: optimizing big-game production, providing | *Retain existing standard, but remove item e.* |

| LNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| | a variety of hunting recreation experiences, protecting critical grizzly bear habitat, reducing sediment in streams, reducing road maintenance costs, and providing for firewood and commodity removal. The criteria to be used to analyze the need for road use restrictions are from the 1984 edition of the Forest Travel Plan and are detailed as follow:<br>e. Roads within grizzly bear habitat may be closed seasonally if it is determined that an open road may be increasing the risk of human-caused bear mortality. Within designated Essential Habitat spring range, all nonarterial systems will be closed April 15 to June 15. On summer range, roads that bisect identified critical habitat components will be closed July 15 thru October 15. | |
| Access and Recreation | -- | *Add* NCDE-STD-AR-01 through 04 and add NCDE-GDL-AR-01 & 02 (all apply to the PCA). |
| Access and Recreation | -- | *Add* NCDE-LNF Zone1-STD-01 (applies to zone 1 and the Ninemile DCA). |
| Grazing | Forest-wide Standards, Range (p. II-9)<br>4. Conflicts between livestock and big game will be resolved so big game are allocated the forage required to meet their needs. Domestic livestock will be allowed to utilize any forage surplus not conflicting with the planned expansion of big-game populations. Reductions in livestock numbers will be avoided if possible, but will be acceptable to meet management goals.<br>5. Allotments with no AUM's shown for the Proposed Action in Appendix B will be phased out unless the permittee is willing to make necessary investments in livestock management and structural improvement to maintain range conditions at an acceptable level. | *Retain these Range standards.* |
| Grazing | -- | *Add* NCDE-STD-GRZ-01 through 06 and add NCDE-GDL-GRZ-01 & 02 (all apply to the PCA). |
| Timber Harvest | Forest-wide Standards, Timber (p. II-11-12)<br>10. Regional standards will be followed for tree utilization, management intensity, measurement, growth suitability for timber production, tree openings, and silvicultural systems. | *Retain this standard.* |
| Vegetation | -- | *Add* NCDE-GDL-VEG-01 through 05 (all apply to the PCA). |
| Special Forest Products | Special Forest Products | *Add* NCDE-STD-SFP-01 (applies to the PCA). |
| Minerals | Forest-wide Standards, Minerals (p. II-15 to 16)<br>33. Areas currently withdrawn from mineral entry will be evaluated in accordance with the provisions of Section 204 of the Federal Land Policy and Management Act (FLPMA) of 1976 to determine whether the withdrawal is still necessary. | *Retain this standard.* |
| Minerals | 34. Congressionally designated wilderness areas on the Lolo National Forest are withdrawn from mineral entry and leasing. No new mining claims may be located nor may any mineral leases be issued in these areas. Valid existing rights established prior to the withdrawal date will be recognized, subject to stipulations insuring compliance with the acts creating these | *Retain this standard.* |

| LNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| | administrative areas. | |
| Minerals | 35. The right to prospect, develop, and mine on National Forest System lands open to entry and location will be recognized. | *Retain this standard*. |
| Minerals | 36. When applicable, claimants/operators must have an approved Notice of Intent (NOI) or Plan of Operation (PO0) and bonding in accordance with 36 CFR 228 prior to initiating mining activity. | *Retain this standard*. |
| Minerals | 41. Before oil and gas lease stipulation recommendations are made, site specific analysis of environmental effects will be made. Stipulations which are displayed in Appendix F and based upon the Environmental Analysis for Oil and Gas of Nonwilderness Lands on the Lolo National Forest, 9/20/82, will be recommended in accordance with management area direction in Chapter III. In some instances, the stipulations will include a provision for "no surface occupancy." The lessee or designated operator has the right to explore for and extract oil/gas from his/her lease in accordance with the stipulations attached to the lease. Drilling requests are handled individually and receive an additional site specific environmental analysis. Drilling permits are issued by the Bureau of Land Management (BLM). The BLM will consult with the Forest Service in order to obtain site specific concerns and stipulations prior to approving the drilling permit. | *Retain this standard* and add NCDE-STD-MIN-08 (which applies to the PCA) |
| Minerals | -- | *Add* NCDE-STD-MIN-01 through 07 and add NCDE-GDL-MIN-01 through 06 (all apply to the PCA and zone 1). |
| Monitoring | Monitoring (p.V-6) | *Add*: NCDE-MON-01, NCDE-MON-02, NCDE-MON-03, NCDE-MON-04, NCDE-MON-05, NCDE-MON-06, NCDE-MON-09 and NCDE-MON-10. |

| LNF Resource | Current forest plan | Proposed amendment |
|---|---|---|
| Additional Requirements | Additional Requirements, Lolo National Forest<br>Per the 2006 Biological Opinion and Incidental Take Statement, terms and conditions applicable to the NCDE recovery zone portion of the Forest are:<br>Compliance with the NCDE Access Committee recommendation of no more than 19 percent of a subunit exceeding 1 mile of open motorized access (OMRD) per square mile, shall be achieved within 5 years of the date of this Incidental Take Statement. Within 2 years, the Forest shall be halfway to attaining these levels of open motorized access. Forest actions shall not increase open motorized access in subunits that exceed this standard.<br>Compliance with the NCDE Access Committee recommendation of no more than 19 percent of a subunit exceeding 2 miles of total motorized access (TMRD) per square mile, shall be achieved within 5 years of the date of this Incidental Take Statement.<br>The NCDE Access Committee recommendation for minimum core of 68 percent or greater of a subunit shall be achieved within 5 years of the date of the Incidental Take Statement. Within 2 years, the Forest shall be halfway to attaining these levels of core areas within subunits. Forest actions shall not decrease core habitat in subunits that exceed this standard.<br>For subunits in which more than 25 percent is privately owned, the Forest shall not contribute to increases in open or total motorized access or to decreases in core area.<br>For the Swan subunit, the above requirements were modified to no more than 17 percent TMAD, no more than 31 percent OMAD with 22 percent OMAD during the spring, and at least 55 percent security core. | *These previous Biological Opinions and Incidental Take Statements would be superseded by the consultation on the forest plan amendment.*<br>*(See NCDE-STD-AR-02.)* |
| Additional Requirements | In 2004, FWS issued a biological opinion and incidental take statement on the effects of the Lolo Forest Plan direction related to access management, food and attractant storage, and livestock grazing on grizzly bears occurring on the Forest outside the NCDE recovery zone. This was extended in 2012. The term and condition states: The Forest will contact the U.S. Fish and Wildlife Service if more than 2 miles of new permanent road over the 2004 baseline, or 7.14 miles total, will be constructed over the next 10 years in the distribution area outside of the NCDE recovery zone. | *These previous Biological Opinions and Incidental Take Statements would be superseded by the consultation on the forest plan amendment.*<br>*(See NCDE-LNF Zone 1-STD-01.)* |