United States Department of the Interior
Fish and Wildlife Service
Montana Ecological Services Office
585 Shephard Way, Suite 1
Helena, Montana 59601-6287

In Reply Refer To:
File: M19 Lolo National Forest
Ecos # 2022-0007548 (Lolo Forest Plan)

March 10, 2023

Carolyn P. Upton, Forest Supervisor
Lolo National Forest
24 Fort Missoula Road
Missoula, Montana 59804

Dear Ms. Upton:

The U.S. Fish and Wildlife Service (Service) has reviewed the biological assessment regarding reinitiation of consultation on the effects of the Lolo National Forest (Forest) Plan (Forest Plan) on grizzly bears (*Ursus arctos horribilis*). The Forest analyzed the effects of the Forest Plan and made a determination of *may affect, likely to adversely affect* for federally listed grizzly bears. Reinitiation of consultation for other listed species was not necessary at this time.

The attached biological opinion addresses the effects of the Forest Plan on the listed grizzly bear and is based on information provided in the 2022 biological assessment and additional information received during the consultation process. The biological opinion was prepared in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Thank you for your continued assistance in the conservation of endangered, threatened, and proposed species. A complete project file of this consultation is on file at the Service's Montana Field Office. If you have questions or comments related to this consultation, please contact Katrina Dixon at katrina_dixon@fws.gov.

Sincerely,

BENJAMIN CONARD Digitally signed by BENJAMIN CONARD
Date: 2023.03.10 12:40:02 -07'00'

for Adam Zerrenner
Office Supervisor

ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

BIOLOGICAL OPINION

on the

Effects of the Lolo National Forest Plan
on Grizzly Bears

Agency:	U.S. Department of Agriculture Forest Service Lolo National Forest Missoula, Montana
Consultation Conducted by:	U.S. Fish and Wildlife Service Montana Field Office Helena, Montana
Date Issued:	March 10, 2023

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INTRODUCTION

This biological opinion was prepared by the U.S. Fish and Wildlife Service (Service) and analyzes the effects of the 1986 Forest Plan (Forest Plan) for the Lolo National Forest (Forest) on grizzly bears (*Ursus arctos horribilis*). As grizzly bear presence has expanded and they may be present Forest-wide, an area larger than previously consulted on, the Forest requested reinitiation of consultation in February of 2021 in order to analyze any potential additional effects of the Forest Plan on grizzly bear that were not previously consulted on. The Service received a draft biological assessment to review in August of 2021 and a final biological assessment on January 10, 2022. We continued to receive information regarding this consultation through March 8, 2023.

Section 7(b)(3)(A) of the Endangered Species Act of 1973, as amended (Act) requires that the Secretary of the Interior issue biological opinions on federal agency actions that may adversely 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 result in jeopardy or 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 biological opinion addresses only impacts to federally listed species and does not address the overall environmental acceptability of the proposed action.

This consultation represents the first tier of a tiered consultation framework, with each subsequent project that may affect grizzly bears as analyzed within this programmatic biological opinion, as implemented under the Forest Plan, being the second tier of consultation. When applicable, some second tier consultations would reference back to this programmatic biological opinion to ensure that the effects of specific projects under consultation are commensurate with the effects anticipated in this biological opinion and incidental take statement.

Consultation History

Informal consultation on the Forest Plan began between the Forest and the Service in 2020. The Service received a draft biological assessment to review and comment on in August of 2021. We received the final biological assessment and request for consultation on the effects of the Forest Plan on January 10, 2022 (U.S. Forest Service 2022), which is incorporated here by reference. The Forest Plan has been through several consultation processes since 1986. Pages 7 through 10 of the biological assessment display a thorough history of consultation between the Forest and the Service (*Ibid.*). Further consultation continued through email, meetings, and phone conversations with Forest staff. We continued to receive information regarding this consultation through March 8, 2023.

Upon review of the biological assessment and additional information, the Service has prepared a new biological opinion for the Forest Plan that supersedes several previous biological opinions, as described below. The biological assessment, information in our files, and additional information and discussions throughout the informal and formal consultation process were used

in the preparation of this biological opinion. A complete project file of this consultation is on file at our office.

DESCRIPTION OF THE PROPOSED ACTION

The proposed action is the ongoing implementation of the 1986 Forest Plan until such time as the Forest Plan is revised. The Forest anticipates beginning revision of the 1986 Forest Plan in 2023. The Forest expects to complete Forest Plan revision by 2026 at the earliest. This consultation and biological opinion on the ongoing implementation of the 1986 Forest Plan will be in effect until a biological opinion is completed for a revised Forest Plan and supersedes this biological opinion, up to 10 years.

The Forest Plan is the land use planning level guidance document for the Forest, providing direction for project and activity decision making and provides an integrated plan for land and resource management, which articulates desired conditions, goals, objectives, standards, guidelines, and suitability of lands. For more specific information on the Forest Plan, refer to the terrestrial biological assessment (U.S. Forest Service 2022). Existing management direction (forest-wide, by management area, and specific to the Cabinet-Yaak Ecosystem (CYE) and Northern Continental Divide Ecosystem (NCDE) recovery zones) that may affect grizzly bears on the Forest is listed in detail in Appendix 2 of the biological assessment. No Forest Plan direction specifically addresses the management of grizzly bears outside of the recovery zones, NCDE zone 1, and the Ninemile DCA. Broad Forest-wide goals, objectives, and standards in the Forest Plan that pertain to these areas and are aimed at conservation of threatened and endangered species displayed in the biological assessment (*Ibid*.).

The Forest Plan is considered a framework programmatic action. It 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 Forest. Therefore, any action subsequently authorized, funded, or carried out under the Forest Plan, will be addressed in subsequent section 7 consultations, as appropriate. Types of activities subsequently authorized, funded, or carried out under the Forest Plan that may affect grizzly bears are described in the biological assessment prepared for the Forest Plan, which is hereby incorporated by reference (U.S. Forest Service 2022).

STATUS OF THE SPECIES

No critical habitat has been designated for grizzly bears. For information on the status of grizzly bears, including regulatory history, species description, life history, and status and distribution, refer to the Grizzly Bear Recovery Plan (U.S. Fish and Wildlife Service 1993), the grizzly bear 5-year status review (U.S. Fish and Wildlife Service 2021), the species status assessment (SSA) for grizzly bears (U.S. Fish and Wildlife Service 2022a), the grizzly bear recovery program 2021 annual report (U.S. Fish and Wildlife Service 2022b), the conservation strategy for the grizzly bear in the NCDE (NCDE subcommittee 2020), Grizzly bear demographics in the NCDE (Costello et al. 2016), NCDE grizzly bear population monitoring team 2021 annual report (Costello and Roberts 2022), the Greater Yellowstone Ecosystem (GYE) conservation strategy (U.S. Fish and Wildlife Service 2016), the Yellowstone Grizzly Bear Investigations 2021 (van Manen et al. 2022), the Cabinet-Yaak (CYE) Grizzly Bear Recovery Area 2021 Research and

Monitoring Progress Report (Kasworm et al. 2022a), Density, distribution, and genetic structure of grizzly bears in the Cabinet-Yaak Ecosystem (Kendall et al. 2016), and the Selkirk (SE) Mountains Grizzly Bear Recovery Area 2021 Research and Monitoring Progress Report (Kasworm et al. 2022b). These documents (referenced here), include the best available science regarding the status and distribution of grizzly bears and are incorporated by reference.

In summary of these documents cited above, grizzly bear populations within the lower 48 states currently exist primarily within and around four ecosystems (GYE, NCDE, CYE, and SE) that include portions of four States (Wyoming, Montana, Idaho, and Washington). Grizzly bear range has been expanding in these areas and multiple grizzly bear sightings have been confirmed in potential linkage areas between the existing ecosystems and also within the Bitterroot Ecosystem (BE); however, no known population occurs in the BE or between these ecosystems. No known population occurs in the North Cascades Ecosystem (NCE). While the range of grizzly bears in some ecosystems has significantly expanded since 1975, the overall range and distribution of grizzly bears in the lower-48 States remain below historical levels at approximately 6 percent of historical range (U.S. Fish and Wildlife Service 2022a). The estimated population size and distribution in both the GYE (1,063 individuals) and NCDE (1,138 individuals) have more than doubled since listing (van Manen et al 2022, Costello and Roberts 2022, U.S. Fish and Wildlife Service 2022a). All recovery criteria was met in both the GYE and NCDE for 2021 (U.S. Fish and Wildlife Service 2022b) and have all been met for at least the last 10 years, with some individual criteria being met even longer. The CYE and SE have also experienced positive population growth rates and increases in population sizes, with the CYE increasing with an annual growth rate of 1.9 percent and the SE increasing with an annual growth rate of 3.1 percent (Kasworm et al. 2022a, Kasworm et al. 2022b). The mortality criteria for the 2016 through 2021 period was met for the CYE but the number of unduplicated females with cubs and BMU distribution criteria have not been met (U.S. Fish and Wildlife Service 2022a, Kasworm et al. 2022a). For the period 2016 through 2021, the BMU distribution criteria was met for the SE but the number of unduplicated females with cubs and the total and female mortality criteria were not met (Kasworm et al. 2022b). Although no known population occurs within the BE, multiple verified sightings have occurred in linkage zones close to the BE recovery zone (U.S. Fish and Wildlife Service 2022a). The North Cascades is also currently unoccupied by a grizzly bear population (Ibid.). The SSA documents the results of a comprehensive review of the life history, ecology, threats, and viability for the grizzly bear and provides more detailed summaries and information for each ecosystem, as well as the listed entity of grizzly bears in the lower 48 states, including information incorporated from the documents referenced in the paragraph above, among many additional references (Ibid.).

Analysis of the Species Likely to be Affected

The biological assessment determined that implementation of the Forest Plan would likely adversely affect individual grizzly bears. Therefore, formal consultation with the Service was initiated and this biological opinion has been written to determine whether or not activities associated with this action are likely to jeopardize the continued existence of grizzly bears. Grizzly bears are listed as threatened under the Act. Critical habitat has not been designated for this species, therefore none would be affected by the proposed action.

ENVIRONMENTAL BASELINE

Under the provisions of section 7(a)(2), when considering the "effects of the action" on listed species, the Service is required to consider the environmental baseline. Regulations implementing the Act (50 C.F.R. § 402.02) define the environmental baseline as the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in progress. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline.

Action area, as defined by the Act, is the entire area affected directly or indirectly by the federal action and not merely the immediate area involved in the action. For the purposes of this biological opinion, the action area for the analysis of effects of the Forest Plan includes the approximately 2,230,167 acres of Forest land within the administrative boundaries of the Forest. Although within the action area, the inholdings of ownerships other than the Forest are not included in the total acreages above and are not subject to Forest management. The Forest occurs within portions of Flathead, Granite, Lake, Lewis and Clark, Mineral, Missoula, Powell, Ravalli, and Sanders Counties and is managed as five ranger districts including the Missoula, Ninemile, Plains-Thompson Falls, Seeley Lake, and Superior Ranger Districts.

The Forest is influenced by both continental and maritime climates, resulting in a wide range of environmental gradients and diverse wildlife habitats. Elevations range from less than 2,400 feet on the Clark Fork River below Thompson Falls to Scapegoat Mountain at 9,202 feet. The Forest contains more than 100 named lakes, nearly 1,000 named streams, and five major rivers. Four wilderness areas are located at least partly on the Forest including the Rattlesnake, Welcome Creek, Scapegoat, and Selway-Bitterroot Wilderness Areas.

The Forest straddles three grizzly bear ecosystems: Cabinet-Yaak Ecosystem (CYE), Northern Continental Divide Ecosystem (NCDE), and Bitterroot Ecosystem (BE). In total, about 20 percent of the Forest lies within a grizzly bear recovery zone while about 80 percent of the Forest is outside of the recovery zones (Table 1). Areas within the CYE recovery zone are further delineated into bear management units (BMUs) and areas within the NCDE recovery zone are further delineated into subunits. Because a resident population of grizzly bears does not occur in the BE, no BMUs or subunits have been delineated for the BE recovery zone to date. The BMUs (CYE) and subunits (NCDE) are managed specifically for grizzly bears and approximate an average female home range size and are consistently used as analysis units for site-specific actions. A subset of acreage outside of the recovery zones occurs within areas identified as part of NCDE Zone 1 and the Ninemile demographic connectivity area (DCA) and have some level of grizzly bear management. Some lands in the CYE that occur outside of the recovery zone and meet certain recurring use criteria have been delineated as BORZ (bears outside of the recovery zone) and have some level of grizzly bear management. However, no areas on the Forest in the CYE have met the criteria for recurring use and therefore no BORZ areas have been delineated on the Forest.

The remaining portion of the Forest, which occurs outside of the recovery zones have been delineated into grizzly bear analysis units (GBAUs), which approximate an average female grizzly bear home range size and are used as static analysis units for site-specific actions in order to consistently analyze effects to grizzly bears over space and time. They do not represent actual grizzly bear home ranges or imply that occupancy or occurrence by grizzly bears is expected or required. GBAUs were delineated following watershed boundaries where possible and adjusted where necessary to minimize non-federal ownerships. The GBAUs encompass a total of 1,816,544 acres of the Forest (all of the lands on the Forest that are outside of grizzly bear recovery zones). GBAUs are delineated to provide a suite of seasonal habitats including some higher elevation, steeper terrain that could provide denning habitat, as well as more mesic, productive forest types and wet meadows that are likely to provide spring and fall food resources. Since the Forest continues to acquire land, the GBAU boundaries may need to be adjusted in the future to include those acquired lands that occur outside the GBAU boundaries.

Table 1. Acres of Forest land outside and within grizzly bear recovery zones (U.S. Forest Service 2022).

	Acres	**Percent**
Forest land within the CYE recovery zone	145,782	7%
Forest land within the NCDE recovery zone	269,822	12%
Forest land in NCDE Zone 1	173,099	8%
Forest land in the Ninemile DCA	256,229	11%
Forest land within the BE recovery zone	9,802	<1%
Remaining Forest land outside of the above areas	1,375,433	61%
Total	**2,230,167**	**100%**

Status of the Species within the Action Area

The only BMU within the CYE recovery zone that occurs on the Forest is BMU 22, which is also known as the Mt. Headley BMU but will be referred to as BMU 22 throughout this document. The Forest also has areas outside of the CYE recovery zone but none are considered as BORZ. Seven subunits occur within the NCDE recovery zone including the Monture, Mor-Dun, North Scapegoat, South Scapegoat, Mission, Rattlesnake, and Swan subunits. The Forest also has areas outside of the NCDE recovery zone, with some portions delineated within NCDE Zone 1 and the Ninemile DCA. Portions of the action area occur within the BE recovery zone where no BMUs or subunits have been delineated as well as areas outside of it. Refer to Table 1 above for the acreages of these areas. Grizzly bears may be present throughout most of the Forest with varying levels of occurrence ranging from a high likelihood in some areas, including residents, and a very low likelihood or transient use in others. The likelihood of grizzly bear presence is likely to increase over time as grizzly bear populations continue to increase and expand.

In some areas of the Forest either no grizzly bears have been verified or only male transients or dispersers have been verified. In these areas, where numbers of grizzly bears are likely low to very low to none, numbers are expected to increase relatively slowly over time. This is especially true for female grizzly bears. As described in Proctor et al. (2012), males move more frequently and over longer distances than females. Males have large home ranges and establish home ranges nearly three times further away from their mother's home ranges than do female

offspring. Females usually establish smaller home ranges than males that overlap with their mother's home range (Waser and Jones 1983; Schwartz et al. 2003). In doing so, they generally disperse over much shorter distances than male grizzly bears (McLellan and Hovey 2001; Proctor et al. 2004). Therefore, female dispersal is a multi-generational process where females must live year-round in an area, successfully reproduce, and offspring disperse into adjacent, unoccupied habitat. Thus, female grizzly bear presence in portions of the action area is likely to increase only slowly over time.

Factors Affecting Species Environment within the Action Area

This section identifies and describes key areas of the existing Forest Plan management that affect the grizzly bears' environment. These factors include access management, food and attractant management and developed sites, livestock management, vegetation and fire management, and energy and mineral development. Existing management related to these factors is summarized below. The biological assessment provides additional information on the existing condition related to the following factors and is incorporated by reference (U.S. Forest Service 2022). General impacts of these factors will be discussed in more detail in the '*Effects of the Action'* section below.

Access Management

Motorized access has long been recognized as a major factor affecting grizzly bears (see section below, '*General Effects of Roads on Grizzly Bears'*). Some portions of the action area are highly roaded while other portions are sparsely roaded or have no roads at all. With the exception of the subunits and BMUs within the recovery zones, we have previously analyzed portions of the action area using only linear motorized route density or an estimate of acres of low, moderate, or high levels of motorized route density. Providing linear route density or acreage of low, moderate, and high levels of motorized use gives an idea of the amount of roads in the action area, however it does not represent how these routes occur on the landscape. Although this information provides a useful threshold to describe human-caused effects to grizzly bears based on existing literature, motorized route density or acreage alone fails to consider how road placement affects habitat patch size (Proctor et al. 2019). For example, portions of the GBAUs may have high route densities (even within the GBAUs with lower overall linear route densities) while other portions of the GBAUs may have low route densities or even no motorized routes (even within the GBAUs with higher overall linear route densities). In other words, even in a GBAU with overall low route density, patches of high route density areas may be interspersed with patches of low route density or unroaded areas or in a GBAU with overall high route density, patches of low route density or unroaded areas may be interspersed with patches of high route density.

Secure habitat has been identified as one of the key issues related to effects of motorized access on grizzly bears and is important to the survival and reproductive success of grizzly bears. In a comprehensive review of research into the relationships between motorized access and grizzly bears, Proctor et al. (2018) cited research findings (e.g. Nielsen et al. 2004) indicating that distance to roads and location of roads in relation to certain habitats may be as or more important than road density in predicting impacts to bears. Proctor et al. (2018) also noted that the spatial arrangement of motorized routes and secure areas may be critically important in terms of the degree to which bears may be affected by motorized access. In other words, the key to limiting

impacts of roads on bears is tied to availability, location, and distribution of secure habitat that is a function of not simply numeric density of motorized routes, but the spatial arrangement in which they occur.

While secure habitat is directly tied to and based on open and restricted motorized routes, it more adequately represents the potential effects to grizzly bears related to motorized access as it provides a more accurate indication of the spatial mix of motorized routes and secure habitat. For example, measurements of route density in situations of uniformly spaced roads, even at an otherwise acceptable route density, can provide very limited patches of secure habitat that are functionally useful for grizzly bears (Proctor et al. 2019). Similarly, large patches of important habitat may be available in areas with high road densities if roads are concentrated in specific areas. Accordingly, we have incorporated secure habitat into this analysis.

Several methods exist for defining secure habitat relative to distances from routes and/or other human disturbance. Although the concept and benefits of secure habitat has been well documented (Mace et al. 1996, Wakkinen and Kasworm 1997, Gibeau et al. 2001, Schwartz et al. 2010), science has not provided a clear definition of the specific metrics for defining secure habitat. The IGBC (IGBC 1998) reviewed four studies indicating a range of avoidance of roads in four disparate locations and recommended a distance of 500 meters (0.31 mile) from motorized routes as the minimum distance to define secure habitat. The 500 meter distance has become the most universal distance for delineating secure habitat.

Areas greater than 500 meters from motorized routes provide areas free of motorized access related disturbance and provide security for grizzly bears. Depending on the juxtaposition to other patches of secure habitat or other resources, even small patches of habitat more than 500 meters from motorized routes may provide valuable space for grizzly bears to avoid human disturbance, move between important food resources, and/or can be utilized for long-distance connectivity.

Within the portions of the action area that are within recovery zones, secure core is managed differently than secure habitat outside of the recovery zone. Therefore, it is important to distinguish the terminology associated with such habitat. Within the subunits of the NCDE recovery zone, areas more than 500 meters from an open or gated motorized route and greater than 2,500 acres in size are defined as ‘secure core’. Within the BMUs of the CYE recovery zone, areas more than 500 meters from an open or gated motorized route, with no minimum patch size, are also defined as ‘secure core’. Whereas, areas more than 500 meters from any drivable motorized route that are located outside of the recovery zones are defined as ‘secure habitat’. Further in this document, secure habitat outside of the recovery zones will be displayed showing both the total acreage of secure habitat, as well as the acreage of polygons larger than 2,500 acres. At the programmatic scale of this biological opinion on the Forest Plan, we will measure and track the total acreage of secure habitat within the GBAUs outside of the recovery zones.

Of the four occupied recovery zones, only the NCDE recovery zone has a minimum patch size requirement for secure core, which is 2,500 acres. This number relied on the observed patch size of unroaded habitat in the composite home range for seven adult females, with 83 percent of locations in the NCDE occurring within 7 polygons that exceeded 2,260 acres in size (U.S. Forest Service 2022). Conversely, Wakkinen and Kasworm (1997) reported that more than 97

percent of the use by successfully reproducing females in the CYE occurred in blocks greater than 1,280 acres in size. Smaller polygons, particularly those of less than 2 square miles, tended to be underused by grizzly bears in the study, although use still occurred in blocks as small as 141 acres. No minimum core area size was established for management in the CYE recovery zone due to the limitations of small sample size, although the authors suggested that if a minimum size occurs, it is likely between 1,280 and 5,120 acres. Larger areas of secure habitat are thought to be more valuable in providing for the habitat requirements of reproductive female bears. However, in areas with little availability of effective secure core/secure habitat, smaller patches may provide some value to bears, especially in providing habitat connectivity, although maybe not to the same value as larger patches (U.S. Fish and Wildlife Service 2016).

Management of motorized access is effective in minimizing the effects of motorized access on grizzly bears (Proctor 2019). All known National Forest System Roads (NFSR) and unauthorized roads on the Lolo National Forest are identified in GIS using the Forest Service Infrastructure (INFRA) database and roads atlas (U.S. Forest Service 2022). The INFRA database tracks general road information including route location, status, length, jurisdiction, design standard, travel condition, and maintenance level and is updated as additional information becomes available. Route status in INFRA denotes whether a road is a NFSR or an unauthorized road, both are defined below (*Ibid*.):

- National Forest System road: 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.
- Unauthorized road and trail: a road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas. Unauthorized roads are categorized into two types and recorded in the SYSTEM linear event in the INFRA Travel Routes database. The two types are:
    - Undetermined (UND): roads where long-term purpose and need has yet to be determined.
    - Not Needed (NOT): roads not needed for long-term management of national forest resources as determined through an appropriate planning process.

Undetermined roads on the Forest are commonly a result of old logging or mining roads constructed decades ago and are typically grown in with vegetation or have some type of road failure that would exclude motorized vehicle use. At times, old routes that have been on the landscape for decades are identified by Forest staff during routine field work. These routes were likely constructed to support logging and mining activities on the Forest in the early to mid-1900s. When identified, these routes are added to the Forest's INFRA database and attributed as "undetermined" until their long-term purpose and need are determined.

In more recent years, the Forest has acquired over 170,000 acres of non-Forest land that contained roads prior to Forest ownership. These acquired lands have resulted in the Forest adding many more miles of roads into INFRA. The motorized routes on acquired lands are not new routes as these routes likely existed on the acquired lands for years. Although the Forest does a basic roads assessment prior to acquiring lands, the Forest initially records all roads on acquired lands as "undetermined" in INFRA after acquisition and this remains the status until such time in the future when the Forest decides upon the long-term need of those roads. All undetermined roads are closed to public motorized use per the Forest's Motorized Vehicle Use Map. The Forest makes management decisions on these routes as projects are identified in the

area of the acquired lands. As part of a Forest decision, undetermined roads can be added to the National Forest System or decommissioned. If an undetermined road is added to the system, then the Forest will decide on the maintenance level and closure status (open, closed, seasonally closed, or administrative) or decide to "store" the road. A stored road is closed to motorized vehicles, but it could be used in the future if it is needed. If an undetermined road is not needed for future use, the Forest will decommission the road. Any changes to a road's status are updated in INFRA. If a Forest decision includes the need for actions to physically add a closure device or decommission a road, INFRA is updated once those actions are contracted to be completed on the ground.

Thus, in most cases, undetermined routes have existed for many years (either on the Forest or on lands recently acquired by the Forest), and are part of the environmental baseline from which grizzly bears have been experiencing effects. Thus, while documenting undetermined routes offers a more accurate representation of the conditions on the ground, in many cases, it does not represent new effects to grizzly bears. Further, undetermined routes are often grown in with vegetation and are not accessible to motorized vehicles.

Like anywhere on the Forest, as new information becomes available, including undetermined routes not previously documented, the baseline will be adjusted accordingly to reflect these updates. These undetermined motorized routes, like other updates to the INFRA database, are used to update the grizzly bear secure habitat or motorized route metrics to reflect these changes and these changes will be shared with the Service, through reporting and/or project level consultation.

BE Recovery Zone

The Forest does not have any requirements to provide or manage for motorized access or secure core in the BE recovery zone. However, the portion of the BE recovery zone that occurs on the Forest is entirely within the Selway-Bitterroot Wilderness and it all functions as secure core. Thus, the portion of the Forest within the BE recovery zone is expected to provide habitat to support survival and reproduction of female grizzly bears that may occur there at some point over the life of the Forest Plan.

CYE Recovery Zone

Based on research by Wakkinen and Kasworm (1997), within the CYE recovery zone, research benchmarks for open motorized route density (OMRD), total motorized route density (TMRD), and secure core indicate that adverse effects to grizzly bears are likely to occur when OMRD exceeds 1 mile per square mile in more than 33 percent of the subunit, TMRD exceeds 2 miles per square mile in more than 26 percent of the subunit, and secure core is not at least 55 percent of the subunit during the non-denning period.

In 2011, the Lolo, Kootenai, and Idaho Panhandle Forest plans were amended with direction for motorized access management within the CYE and Selkirk Ecosystem (SE) recovery zones (2011 access amendments). The selected alternative established BMU-specific standards and provided the rationale for varying from the benchmark values. The portion of the CYE recovery zone that is on the Forest is within the BMU 22. For this BMU, the motorized access management standard is to maintain no more than 33 percent OMRD, no more than 35 percent

TMRD, and provide at least 55 percent secure core. TMRD was set higher than the research benchmark because the amount and pattern of private ownership precludes attaining 26 percent. At the time of the 2011 Access Amendment, none of these three access standards were met in BMU 22, which had 51 percent secure core, 38 percent OMRD, and 37 percent TMRD. These conditions were anticipated to cause adverse effects due to disturbance and displacement of individual grizzly bears that may be present in the BMU. This BMU is a major component of the Cabinet-Yaak to Bitterroot Linkage Zone identified by Servheen et al. (2001).

The Record of Decision for the 2011 access amendments estimated that full implementation of the actions needed to reach the prescribed standards of the selected alternative would take eight years from the date of the decision in 2011. On September 6, 2019, the Forest reported that the existing percent of secure core habitat in BMU 22 had been improved to 52.9 percent, and requested a three-year extension of the time-frame specified in the incidental take statement to reach 55 percent to allow for completion of the Forest's ongoing BMU 22 Compliance Project. On January 29, 2020, the Service amended their 2011 biological opinion to extend the incidental take statement to November 2022. On February 11, 2022, the Service received a letter from the Forest stating that the motorized route and secure core metrics described in the 2011 biological opinion and amended incidental take statement for the BMU 22 Compliance Project in BMU 22 have been met. Due to these recent changes in motorized access in BMU 22, the amount of secure core has increased to 55 percent while the OMRD has decreased to 32 percent and TMRD has decreased to 33 percent. Consequently, all three access amendment standards of the 2011 Access Amendment are currently met in BMU 22 and now represent the environmental baseline for the BMU related to motorized access management. Secure core and OMRD meet the research benchmarks where adverse effects are not expected. However, although the standard to have no more than 35 percent TMRD is met in BMU 22, it remains above the research benchmark of having no more than 26 percent TMRD. As such, it is likely that the environmental baseline in BMU 22 will continue to cause some level of displacement that may result in adverse effects to individual grizzly bears that may be present within the BMU.

In addition to meeting the standards associated with OMRD, TMRD, and secure core, other direction was provided under the 2011 access amendment. This direction is described in detail in Appendix 2 of the biological assessment, which is incorporated by reference (U.S. Forest Service 2022). Within this direction, standards were included related to administrative use in the recovery zone. Administrative use shall not exceed 60 vehicle round trips per active bear year (non-denning season of April 1 through November 30) per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30). If the number of trips exceeds 60 trips per active bear year in the Cabinet-Yaak ecosystem, then that road would be considered "open" for effects analysis and reporting purposes. Likewise, if the number of trips exceeds the allowable ecosystem-specific seasonal (spring, summer, and fall) vehicle round trips per road, then that road would be considered "open" for effects analysis and reporting purposes.

The 2011 access amendment direction also allows for some level of entering core area blocks for road decommissioning or stabilization activities. The effects of some scenarios were analyzed and no further section 7 consultation was required, including that the Forest Service may affect underlying core area (i.e., any core habitat that is affected by the subject road and its buffer) within a BMU once per 10-year time frame, and not to exceed 1 bear year for the sole purpose of completing road decommissioning/stabilization activities on existing closed or barriered roads in

core area habitat. Subsequent needs to re-enter individual core areas within a BMU more frequently than once per decade for the purposes of road decommissioning shall be handled on a case-by-case basis through standard section 7 consultation procedures. Routine forest management may be proposed in a core area block after 10-years of core area benefit. However, BMUs must remain at or above the core standard. Therefore, potential losses to existing core must be compensated with in-kind replacement concurrently or prior to incurring the losses. Such in-kind replacement of core would be established within the affected BMU in accordance with the access management direction. Following management, core areas must subsequently be managed undisturbed for 10 years.

Parameters for establishing and managing core habitat in all BMUs were also provided as part of the direction. Once route closures to create core areas are established and effective, these core areas should remain in place for at least 10 years. Therefore, except for emergencies or other unforeseen circumstances requiring independent section 7 consultation, newly created core area shall not be entered via motorized access for at least 10 years after creation. As mentioned, other direction associated with the 2011 access amendment management direction can be found in Appendix 2 of the biological assessment (U.S. Forest Service 2022).

NCDE Recovery Zone

In 2018, the Forest amended their Forest Plan to incorporate management criteria from the NCDE grizzly bear conservation strategy (NCDE grizzly bear amendments). The intent of the NCDE grizzly bear conservation strategy and associated grizzly bear amendments to the Forest Plan is to ensure recovery is maintained post delisting. In general, the NCDE grizzly bear amendments stipulated that within the recovery zone (also referred to as the Primary conservation area or PCA) no net increase in OMRD and TMRD would occur above the 2011 motorized access baseline conditions and no net decrease in secure core would occur below the 2011 motorized access baseline conditions. Thus, over the life of the Forest Plan, the levels of OMRD, TMRD, and secure core in all subunits are to be maintained at the same (or better) level than the conditions as of December 31, 2011, at which time the NCDE grizzly bear population was stable to increasing. Some exceptions under certain conditions do exist, as detailed in the NCDE grizzly bear amendments and conservation strategy. For example, the NCDE grizzly bear amendments allow temporary effects to the 2011 baseline for temporary activities or projects. Temporary route construction and use would not affect the overall 2011 baseline measurement. Permanent changes in OMRD, TMRD, or secure core may occur due to improved data, unforeseen circumstances, natural events, or other reasonable considerations. Such changes may adjust the baseline values but will not be considered a violation of the motorized access management habitat objectives described in the NCDE grizzly bear conservation strategy (NCDE Subcommittee 2020) and will not require mitigation responses. Acceptable changes that may adjust baseline conditions, as well as a detailed list of application rules for motorized access on federal lands can be found in the 2020 NCDE grizzly bear conservation strategy (*Ibid.*) and summarized in the 2021 monitoring report (Ake 2022), which are incorporated by reference. The changes that have occurred under these exceptions to date along with the rationale for these changes can be found in the 2017, 2019, and 2021 biennial monitoring reports of the motorized access baselines that are produced for the NCDE subunits (Ake 2018, Ake 2020, and Ake 2022).

The existing motorized access conditions for the NCDE recovery zone portion of the action area are displayed in Table 2 by subunit and reflect the most recent information. These conditions

represent the 2011 baseline conditions as updated. The 2021 biennial monitoring report of the 2021 motorized access baselines for the NCDE subunits was issued after completion of the biological assessment for the continued implementation of the Forest Plan. Accordingly, as some metrics were updated since that time, the metrics in Table 2 represent the most current information and may differ than some metrics displayed in the biological assessment. Rationale for those differences can be found in the 2021 monitoring report (Ake 2022). As all updates fall under the exceptions, the updated information does not violate the standard to maintain conditions as of December 2011 with allowable updates and the standard associated with the baseline motorized access conditions is being met.

Table 2. Existing OMRD, TMRD, and Secure Core within the NCDE recovery zone portion of the action area (Ake 2022).

Subunit[1]	OMRD[2]	TMRD[3]	Secure Core[4]
Monture	0 %	0 %	99 %
Mor-Dun	15 %	8 %	80 %
North Scapegoat	0 %	0 %	100 %
South Scapegoat	12 %	15 %	75 %
Mission*	25 %	50 %	37 %
Rattlesnake	6 %	13 %	85 %
Swan	31 %	20 %	53 %

[1]Subunits with an asterisk next to their name are less than 75 percent Forest ownership
[2]OMRD is the percent of the subunit with open motorized routed densities exceeding 1 mile per square mile
[3]TMRD is the percent of the subunit with total motorized routed densities exceeding 2 miles per square mile
[4]Secure core is the percent of the subunit functioning as secure core habitat in patches of at least 2,500 acres, excluding acreage of large lakes and small private lands.

Within the NCDE recovery zone, research benchmarks for OMRD, TMRD, and secure core describe that adverse effects to grizzly bears are likely to occur when OMRD exceeds 1 mile per square mile in more than 19 percent of the subunit, TMRD exceeds 2 miles per square mile in more than 19 percent of the subunit, and secure core is not at least 68 percent of the subunit during the non-denning period. This road-density threshold, first identified by Mace et al. (1996) has been roughly observed by other researchers in multiple study areas (summarized in Proctor et al. 2019) as being a density beyond which adverse effects to female grizzly bears can occur. Table 2 displays that all but two of the subunits (Mission and Swan) meet these conditions related to OMRD, TMRD and secure core. As all other subunits are better than the research benchmarks related to adverse effects for OMRD, TMRD, and Secure Core, the ongoing effects associated with the existing motorized access conditions within those subunits would be insignificant to grizzly bears. The Mission subunit is less than 75 percent Forest ownership and the lower amounts of secure core within the subunit are a result of motorized access on non-Forest land. The Swan subunit is long and narrow and does not contain as much wilderness and/or roadless as other subunits on the Lolo. In the Mission and Swan subunits where the research benchmarks are not achieved, it is anticipated that the environmental baseline may cause some level of displacement that may be adverse to individual grizzly bears in that area. The Forest previously completed a site-specific formal consultation on access management within the Swan subunit in 2011 and is discussed below. As a result of this consultation, in addition to overall OMRD, TMRD, and secure core, spring OMRD is also tracked for the Swan subunit and is currently at 22 percent OMRD.

Outside of the Recovery Zones

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. Recovery zones are areas adequate for managing and promoting the recovery and survival of grizzly bear populations (U.S. Fish and Wildlife Service 1993). Areas within the recovery zones are managed to provide and conserve grizzly bear habitat. Some areas outside the recovery zones have some level of management as described above (i.e. NCDE zones 1 and 2, DCAs) but most areas outside the recovery zones are not managed for grizzly bears and do not have a need to track the same motorized access metrics as within the recovery zone. As such, the moving windows process is not used outside of the recovery zones and the information and knowledge associated with motorized access is not consistent with the information presented for the recovery zones. As described above, we have included an analysis of secure habitat for the areas outside of the recovery zone in order to more accurately portray the potential effects to grizzly bears than a simple linear route density.

NCDE zone 1 and the Ninemile DCA are described in the NCDE grizzly bear conservation strategy (NCDE Subcommittee 2020). In short, NCDE zone 1 is a buffer around the recovery zone (also known as the PCA). The NCDE recovery zone and NCDE zone 1 combined is the area within which NCDE population monitoring data are collected and mortality limits apply. The intent is for NCDE zone 1 to support continual occupancy by grizzly bears, although at a lower density than within the recovery zone. The portion of NCDE zone 1 on the Forest overlaps with six GBAUs including the Clearwater, Cottonwood, Gold, Middle Blackfoot, North Missoula, and Placid GBAUs. Within the southwest corner of NCDE zone 1 is the Ninemile DCA. The Ninemile DCA is intended to provide habitat that can be used by female grizzly bears with cubs and allow for grizzly bear movement to the BE recovery zone. The Ninemile DCA overlaps with four GBAUs including the Keystone, Mill North, Ninemile, and Trout East GBAUs.

Currently, in NCDE zone 1 on the Forest outside the Ninemile DCA, about 325 miles of Forest Service roads are legally open to public motorized use on about 289 square miles of Forest land, for an existing open route density of about 1.1 miles per square mile (U.S. Forest Service 2022 *in litt.*). Based on data presented by Boulanger and Stenhouse (2014), this existing density of roads open to public motorized use is expected to be compatible with bear occupancy and to support survival of females with dependent young sufficient for a stable to increasing population trend. Forest Plan standard NCDE-LNF Zone 1-STD-01 requires no net increase in the 2011 linear density of roads open to public motorized use during the non-denning season on National Forest System lands within NCDE zone 1 (other than the Ninemile DCA). In 2011, the linear open road density for NCDE zone 1, outside of Ninemile DCA, was 1.3 miles per square mile, thus standard NCDE-LNF Zone 1-STD-01 is being met. Secure habitat within the GBAUs that overlap NCDE zone 1 are displayed in Table 3 below. Most of the GBAUs within NCDE zone 1 outside of the Ninemile DCA provide secure habitat at a level substantially less than is likely needed to successfully support a female grizzly bear with cubs. It is likely that the baseline conditions within this area contributes some level of connectivity for bears traveling between recovery zones but is likely resulting in some level of displacement effects that are adverse to individual grizzly bears.

Within the Ninemile DCA, about 569 miles of Forest Service roads and 37 miles of Forest Service trails are legally open to public motorized use on about 400 square miles of Forest land, for an existing average motorized route density of 1.5 miles per square mile (U.S. Forest Service 2022 *in litt.*). This existing motorized route density is expected to be generally compatible with occupancy by and survival of female grizzly bears, including those with dependent young (Boulanger and Stenhouse 2014). Forest Plan standard NCDE-LNF Zone 1-STD-01 requires no net increase in the density of roads and trails open to public motorized use during the non-denning season on National Forest System lands within the Ninemile DCA. In 2011, the linear open route density for the Ninemile DCA, was 1.6 miles per square mile, thus standard NCDE-LNF Zone 1-STD-01 is being met. The environmental baseline with respect to motorized routes open to the public is expected to support habitat connectivity between the NCDE and the other recovery zones, which is the goal of the DCA. Secure habitat within the GBAUs that overlap the Ninemile DCA are displayed in Table 3 below. No Forest Plan standards are applicable to secure habitat in this area. The four GBAUs within the Ninemile DCA provide secure habitat at levels likely substantially less than is needed to successfully support a female grizzly bear with cubs. At the same time, the Keystone and Ninemile GBAUs are notable in that most of the secure habitat is in larger polygons more than 2,500 acres in size. It is likely that the baseline conditions within the Ninemile DCA contributes some level of connectivity for bears traveling between recovery zones but is likely resulting in some level of displacement effects that are adverse to some individual grizzly bears.

The Forest Plan does not require motorized access management in NCDE zones 2 and 3 or in areas outside of these designations nor is the Forest required to provide secure habitat in these areas. A very small portion of the Forest is located within NCDE zone 2 and none of the Forest is located within NCDE zone 3. The remainder of the action area outside of the recovery zones is also outside of the NCDE zones 1 and 2 designations. Reference figure 2 in Appendix 1 of the biological assessment for the various delineations of the action area (U.S. Forest Service 2022).

A Forest-wide analysis of the availability of secure habitat was completed to assess the amount and arrangement of secure habitat and its ability to support grizzly bears that may occupy or move through the areas outside of recovery zones. In the portions of the Forest outside of recovery zones, secure habitat was identified by buffering 500 meters from either side of all motorized routes in the Forest's database that may be drivable, irrespective of seasonal or yearlong restrictions, and includes known routes categorized as undetermined.[1] On Forest lands, routes known to be restricted with physical barriers (not gates), impassable routes, over-the-snow motorized routes/areas, and non-motorized trails can occur within secure habitat polygons and provide secure habitat. It is generally assumed that bermed roads are not in drivable condition, but when there is uncertainty of whether an effective barrier exists, roads were considered drivable and coded as such in the database. This methodology is similar to that used in the nearby NCDE recovery zone, but it acknowledges both that no standards limit administrative use of roads outside of the recovery zones and that available data are less complete in this portion of the Forest in terms of the types and locations of closure devices and the condition of the road prism beyond the barrier. It is important to note that although this approach may result in a

[1] This includes the undetermined routes referenced in the Soldier Butler litigation, *Alliance for the Wild Rockies v. Marten*, No. CV 20-156-M-DLC, 2021 WL 4551496 (D. Mont. Oct. 5, 2021), as well as undetermined routes throughout the Forest.

lower estimate of the existing amount of secure habitat in a GBAU, it assures that the impacts of motorized route use are not underestimated for the GBAU as a whole, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). Accordingly, the secure habitat amounts provided are useful mainly as a broad index of what may be available to grizzly bears that may use the action area outside of the recovery zone. The Forest is expected to update the secure habitat metrics as they update their access data during site-specific project planning in order to more accurately portray what is existing on the ground at the time of this consultation. Routes that were existing on the Forest but unmapped due to errors or lack of information may or may not affect the Forest's estimate of the existing amount of secure habitat, depending on the location of the roads. It is expected that this type of adjustment to the baseline would reflect better data and mapping rather than representing actual changes on the ground or result in additional effects to grizzly bears. As the access database is updated, the improved information will better reflect the existing conditions (that were already present and not new) related to secure habitat in the GBAUs.

In addition, since the Forest lacks inventory information and has no management authority over non-Forest lands, a 500 meter buffer was placed around Forest land in those areas where Forest land is adjacent to non-Forest land ownerships. Buffering Forest land 500 meters from non-Forest Service land ownerships is a conservative approach when considering effects to grizzly bears and will capture any unknown or undisclosed cumulative effects that may result from non-Forest actions on non-Forest land that occur adjacent to Forest lands. For example, actions on adjacent non-Forest land could affect secure habitat on adjacent Forest lands by having impacts within 500 meters of secure habitat. Accordingly, the Forest lands within 500 meters of lands not administered by the Forest may not provide secure habitat due to the potential effects associated with motorized access on adjacent non-federal lands. While it is possible that Forest land within 500 meters may provide secure habitat, information as to activity on non-Forest land is often unknown or not disclosed and the Forest lacks management authority over non-Forest lands. As such, the amount of secure habitat on Forest land adjacent to non-Forest land could change at any time without the Forest's knowledge or authority. Therefore, to be conservative when analyzing effects to grizzly bears, in order to not miss any potential effects associated with motorized access on non-Forest lands, Forest land within 500 meters of non-Forest land is buffered out of the secure habitat metric for the Forest. Because of the long life of the Forest Plan, it is not possible to know everything that may occur on non-Forest land and because the Forest has no control on non-Forest lands, this buffer accounts for any cumulative effects to grizzly bears that may have occurred from actions on non-Forest lands. In other words, any potential unknown effects associated with non-Forest lands have already been incorporated into this analysis ahead of time. For example, if motorized access were to increase on non-Forest land adjacent to Forest land, potentially affecting grizzly bears in the action area associated with disturbance and/or displacement, the effects of such are already considered into the metrics of secure habitat that are measured for Forest lands. Thus, we would not miss any effects to secure habitat on Forest lands over time, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). Using this conservative approach does not result in significant effects to the grizzly bear population.

The approximate existing amount of secure habitat within the GBAUs outside of the recovery zones is displayed in Table 3 by GBAU, rounded to the nearest whole number. Table 3 displays both the total amount of secure habitat in the GBAUs as well as the amount of secure habitat within blocks at least 2,500 acres in size. Patches of secure habitat greater than 2,500 acres may

overlap one or more GABUs so the acres presented in the last column of Table 3 display the portion of those 2,500 acre patches of secure habitat that overlaps a given GBAU and may be less than 2,500 acres on its own but when combined with the habitat in the adjacent GBAU is 2,500 acres or more.

Table 3. Estimated existing secure habitat within the action area outside of the recovery zones (U.S. Forest Service 2022).

GBAU	GBAU Total Acres	Total Acres of Forest Lands in GBAU (percent of GBAU)	Total Acres of Secure Habitat with no minimum patch size (% of GBAU / % of Forest land in GBAU)	Acres of Secure Habitat that are part of patches greater than 2,500 acres (% of GBAU / % of Forest land in GBAU)
NCDE zone 1				
Clearwater	67,672	42,936 (63%)	1,791 (3% / 4%)	792 (1% / 2%)
Cottonwood	59,150	28,223 (48%)	3,123 (5% / 11%)	2,948 (5% / 10%)
Gold	56,700	31,990 (56%)	4,326 (8% / 14%)	3,517 (6% / 11%)
Middle Blackfoot	72,003	6,178 (9%)	140 (<1% / 2%)	0
North Missoula	60,485	52,617 (87%)	35,710 (59% / 68%)	35,575 (59% / 68%)
Placid	49,452	23,207 (47%)	800 (2% / 3%)	0
Ninemile DCA				
Keystone	78,844	57,233 (73%)	18,856 (24% / 33%)	15,340 (19% / 27%)
Mill North	45,962	39,489 (86%)	1,674 (4% / 4%)	251 (<1% / 1%)
Ninemile	118,325	99,597 (84%)	28,653 (24% / 29%)	25,786 (22% / 26%)
Trout East	96,830	59,911 (62%)	6,620 (7% / 11%)	948 (1% / 2%)
Outside of NCDE zone 1 and Ninemile DCA				
Dry Cold	54,727	47,742 (87%)	24,176 (44% / 51%)	19,514 (36% / 41%)
Dry Eddy	84,017	61,230 (73%)	25,172 (30% / 41%)	21,510 (26% / 35%)
Fish Creek	167,586	131,853 (79%)	100,527 (60% / 76%)	98,294 (59% / 75%)
Little Thompson	80,196	42,973 (54%)	4,665 (6% / 11%)	2,376 (3% / 6%)
Lower Rock	145,614	133,773 (92%)	75,014 (52% / 56%)	72,939 (50% / 55%)
Lynch Creek-Clark Fork	120,338	22,848 (19%)	2,919 (2% / 13%)	2,133 (2% / 9%)
Middle Thompson	54,977	31,463 (57%)	8,063 (15% / 26%)	5,535 (10% / 18%)
Mill South	69,834	28,669 (41%)	9,837 (14% / 34%)	9,299 (13% / 32%)
Miller	70,174	56,549 (81%)	2,255 (3% / 4%)	0
North Lolo	98,176	73,558 (75%)	11,667 (12% / 16%)	7,578 (8% / 10%)
Pats Knob	63,542	51,641 (81%)	17,808 (28% / 34%)	13,686 (22% / 27%)
Petty Creek	75,064	62,850 (84%)	15,683 (21% / 25%)	10,019 (13% / 16%)
Prospect	144,377	115,913 (80%)	29,671 (21% / 26%)	10,708 (7% / 9%)
St Regis North	107,509	94,354 (88%)	23,456 (22% / 25%)	15,499 (14% / 16%)
St Regis South	124,392	118,405 (95%)	27,282 (22% / 23%)	12,065 (10% / 10%)
South Lolo	82,455	73,547 (89%)	18,799 (23% / 26%)	15,903 (19% / 22%)
Trout West	140,809	123,039 (87%)	40,291 (29% / 33%)	39,259 (28% / 32%)
Upper Fishtrap	82,322	18,925 (23%)	1,178 (1% / 6%)	4 (<1% / <1%)
Upper Rock	73,711	73,095 (99%)	55,630 (75% / 76%)	55,324 (75% / 76%)
Upper Thompson	43,111	12,735 (30%)	1,886 (4% / 15%)	0

Motorized route densities outside the recovery zone are typically higher due to the varied ownerships, the long history of various human uses, and their proximity to human population centers, which are typically located away from large blocks of unroaded habitat such as wilderness. As such, the amount of secure habitat outside of the recovery zones is typically much lower than the amount within the recovery zones. As displayed in Table 3, the amount of secure habitat on Forest land varies greatly among GBAUs with a range from a low of 2 percent to a high of 76 percent. As previously mentioned, the amount of secure habitat also varies spatially within a GBAU, with higher amounts in some portions and lower amounts in others.

A cluster of three adjacent GBAUs located on the east side of the Lolo NF (Clearwater, Placid, and Middle Blackfoot) have a very small proportion of FS lands and consequently, these GBAUs have very low amounts of secure habitat on Forest lands. However, these GBAUs also contain a significant amount of land owned by The Nature Conservancy, which may provide additional secure habitat that is not recognized here.

Most of the GBAUs (25 of 30) provide less secure habitat than the roughly 50 to 70 percent reported for home ranges of female grizzly bears (Wakkinen and Kasworm 1997, Mace and Manley 1996, review in Proctor et al. 2020). It is likely that the five GBAUs with more than 50 percent secure habitat (North Missoula, Dry Cold, Fish Creek, Lower Rock, and Upper Rock) may be able to support female grizzly bears to successfully live, reproduce, and raise young, while the other GBAUs may not have the amount of secure habitat needed to support female grizzly bears. However, other land ownerships within these GBAUs may bolster the amount of secure habitat to the levels needed to establish and maintain regular home ranges. It is likely that existing motorized access conditions within most of the GBAUs on the Forest may be resulting in some level of ongoing significant displacement effects to grizzly bears, depending on site-specific information such as location and grizzly bear presence. However, some females are able to adapt and have proven that they are able to successfully reproduce and raise young in areas with high route densities and associated low amounts of secure habitat. If grizzly bears are not present, especially female grizzly bears, then no significant effects would be expected until such time that females began using the area.

Monitoring efforts to assess closure effectiveness on the Forest are focused in the NCDE and CYE recovery zones because of their importance for grizzly bear recovery. For the CYE recovery zone (BMU 22), per the Forest Plan, as amended, 30 percent of the road closure devices (gates and barriers) will be monitored annually. No specific requirements are in the Forest Plan to monitor road closure effectiveness in the NCDE recovery zone, but monitoring does occur during the active bear season. Road closure monitoring in the NCDE recovery zone is more opportunistic and usually occurs while conducting other field work. Unauthorized use is determined by damage to or removal of the restriction device, and/or by vegetation and ground disturbance that indicate wheeled motorized vehicle use.

Overall, road closures and gates have been found to be effective at restricting motorized vehicle use, but instances occur where vehicles illegally use restricted routes despite the presence of a sign, gate, or barrier. The CYE and NCDE recovery zones have similar closure effectiveness challenges. Recent road closure monitoring has discovered incidents where a gate has been compromised, gate lock has been cut off, or evidence of a motorcycle has gone around a gate. These types of road closure issues are repaired or augmented to deter use and are revisited to

assess whether barrier repairs or barriers are effective. These repairs have not always resolved issues and continued efforts are sometimes needed to deter use of closed roads.

Roads that are not on the Motorized Vehicle Use Map (MVUM) for the Forest are closed to all public motorized use during the non-denning season. A private entity's non-compliance with the Forest's access management is an illegal activity. While illegal use of the Forest (action area) via motorized access in areas unauthorized for such use may occur within the action area, such illegal use is not considered a Forest action. The term "action" for Section 7 consultation is defined in the Consultation Handbook (U.S. Fish and Wildlife Service, National Marine Fisheries Service 1998) as: all activities or programs of any kind *authorized, funded, and/or carried out*, in whole or in part, by Federal agencies in the United States or upon the high seas (emphasis added). These and any other illegal activities are not the result of a federal action and therefore not analyzed under effects of the action, but their effects and influence are considered for describing the environmental baseline as they may have resulted in past cumulative effects. We have considered the effects of such illegal motorized access on grizzly bears to the best of our ability despite the uncertainty associated with illegal motorized access as described below.

Illegal motorized access could occur anywhere on the Forest. The Forest, including Forest staff and law enforcement, monitors road closures for violations and enforces closures to the extent practicable given the resources available. Recent road closure monitoring has discovered incidents where a gate has been compromised, gate lock has been cut off, or evidence of a motorcycle has gone around a gate. The Forest remedies the situation through repair or replacement as soon as possible after being made aware of the violation. These types of road closure issues are repaired or augmented to deter use and are revisited to assess whether barrier repairs or barriers are effective. These repairs have not always resolved issues and continued efforts are sometimes needed to deter use of closed roads. In a review of past warnings and citations issued by Forest law enforcement to drivers operating a motorized vehicle inconsistent with the MVUM, about ten warnings or citations have been issued each year over the past ten years, although it is unlikely these warnings or citations account for all of the motor vehicle issues nor all motor vehicle violations on the Forest.

The illegal motorized access situations on the Forest are typical of what would be expected for a National Forest in Montana. The Forest and Service both recognize that illegal use is always possible and that the Forest handles these situations by making repairs as soon as possible, to discourage recurring violations. Even with ongoing efforts, some individuals may continue to break the law and illegally access parts of the Forest via motorized vehicles. The Forest's efforts as described minimize areas of chronic and recurring illegal motorized use to the extent possible. Given the Forest's efforts to curtail illegal motorized access and the ongoing monitoring and maintenance of closures, the level of illegal motorized access of within the action area (the Forest) is expected to be minimal.

While illegal motorized access on the Forest has the potential to affect individual grizzly bears, the amount, location, duration, and timing of effects resulting from such illegal use is not typically known. The probability of long-term illegal motorized access and probability of illegal motorized access coinciding with the presence of grizzly bears is anticipated to be low but is unknown. As such, the potential consequences to grizzly bears are uncertain. Nonetheless, any disturbance effects associated with illegal motorized access is expected to be spatially disparate and temporary and is not likely to collectively cause an adverse effect because most Forest users

follow travel regulations and when illegal motorized access is observed or becomes apparent the Forest corrects the situation as soon as they are able.

Moreover, when the Forest implements road restrictions, they typically (but not always (e.g. signage)) use closure devices or methods recognized by the IGBC (IGBC 1998) as effective to restrict motorized access. Accordingly, the intent of using these IGBC recognized closure devices is to implement a closure device that is meant to be effective and it is not the intent or purpose of the Forest to implement closure devices recognized by the IGBC that are meant to be ineffective. While, at any given time, a Forest user could illegally breach a closure device recognized by the IGBC as an effective method in restricting motorized access, that is not the intent of the Forest's action.

If grizzly bears are in the vicinity of illegal motorized access, such illegal use would most likely result in short-term, temporary disturbance effects to grizzly bears as opposed to long-term displacement effects because once they become aware of the issue the Forest corrects the situation as soon as they are able. As such, while the effects of illegal motorized access are considered in the baseline for the proposed action, a change to the metrics used by the Forest to assess the baseline motorized access conditions that are under the authority of the Forest would not occur as such use was temporary and was not authorized, carried out, or funded by the Forest. The timing for corrections may vary depending on seasonal and/or weather conditions and the type of correction needed (for example corrections may range from replacing a broken lock to replacing a broken gate or fixing a barrier, to redesigning and/or constructing a new barrier).

For the area outside recovery zones, secure habitat was delineated using a conservative approach by buffering all drivable motorized routes, regardless of route status (including undetermined routes). Because all routes are considered the same (whether open or restricted) for calculating secure habitat for grizzly bears, illegal motorized use of restricted routes does not affect secure habitat. Secure habitat could only be affected by illegal motorized access with off-road use or use of reclaimed/obliterated or bermed roads (which are no longer considered roads for the purposes of calculating grizzly bear secure habitat or motorized route miles/densities) that occurs within secure habitat. Any effects are expected to be short-term and temporary and would not affect the Forest's motorized access metrics for secure habitat unless the Forest makes a decision to authorize motorized use, thus resulting in long-term effects to secure habitat. Such effects would be analyzed during a site-specific project consultation as applicable.

While disturbance effects to grizzly bears may occur as a result of illegal motorized access on the Forest, it is the Service's opinion that such effects are reasonably uncertain. Information as to the length, duration, amount of illegal use, type of use, and location, among other conditions, is and will continue to be unknown. Accordingly, the Service and the Forest are not able to fully calculate the extent of such effects to individual grizzly bears. However, it is our opinion that the effects of any illegal motorized access on the grizzly bear populations are likely low as evidenced by: (1) the NCDE grizzly bear population status, including an increasing number of grizzly bears, an expansion of the distribution of grizzly bears, and an estimated positive population trend and (2) the CYE population trend changing from declining to slightly increasing, with 14 years of an improving trend since 2006, and improved genetic diversity. Because illegal motorized use is not considered a federal action, any effects associated with illegal motorized access are not exempted under this biological opinion.

The action area includes several designations, such as congressionally-designated wilderness areas and inventoried roadless areas (IRAs), which limit or restrict human activities including motorized travel. These areas provide some level of habitat security for grizzly bears by prohibiting or largely restricting motorized and mechanized travel and by limiting other activities such as timber harvest, development of recreation sites, and others. Four wilderness areas are located at least partly on the Forest, including the Rattlesnake, Welcome Creek, Scapegoat, and Selway-Bitterroot Wilderness Areas, as well as numerous IRAs. Approximately 41 percent of the Forest is within wilderness and IRAs. Table 4 displays the amount of designated wilderness and IRAs both inside and outside of the recovery zone.

Table 4. Acres of wilderness areas and inventoried roadless areas on the Forest (U.S Forest Service 2022).

Area of the Forest	Total Acres	Wilderness acres	Inventoried Roadless Area (IRA) acres	Wilderness plus IRA acres (percent)
CYE recovery zone	145,782	0	67,305	67,305 (45%)
NCDE recovery zone	269,822	94,433	127,979	222,412 (82%)
BE recovery zone	9,802	9,784	36	9,820 (100%)
NCDE zone 1 and Ninemile DCA	429,328	15,403	54,390	69,793 (16%)
Forest land that outside of the recovery zones, NCDE zone 1, and Ninemile DCA	1,375,433	28,262	506,227	534,489 (39%)
Totals	**2,230,167**	**147,882**	**755,937**	**903,819 (41%)**

Winter Motorized Use

The Over-Snow Vehicle Use Map (OSVUM) provides the areas and routes allowed for over-snow vehicle use on the Forest. About 550 miles of over-snow vehicle routes occur on the Forest, which include trails or roads that function as over-snow vehicle trails during the winter months. The Seeley Lake Ranger District is a snowmobile destination area and about half of the over-snow vehicle routes on the Forest occur on the Seeley Lake Ranger District. The Missoula and Superior Ranger Districts host the majority of the remaining half of the over-snow vehicle use routes on the Forest.

Over-snow vehicles are authorized to travel off of designated routes to travel cross-country in specific areas on the Forest. Cross-country travel with over-snow vehicles is allowed on about 66 percent of the Forest, either all winter or seasonally. However, over-snow vehicles can be limited where they can travel given natural conditions like topography and snow depth. The remaining 34 percent of the Forest, which includes wilderness and other sensitive areas, does not authorize over-snow vehicle use.

About 52 percent of the BE, CYE, and NCDE recovery zones and 16 percent of the NCDE zone 1/Ninemile DCA are closed year-round to all over the snow vehicles. A small percentage (<1 percent) within the recovery zone and NCDE zone 1/Ninemile DCA have seasonal restrictions for over snow vehicle use. About 34 percent of the portion of the Forest outside the recovery

zones and NCDE zone 1/Ninemile DCA has year-round over-snow vehicle closures while about 3 percent of this area has seasonal over-snow vehicle closures.

As mentioned, the Seeley Lake Ranger District is a snowmobile destination area. Groomed over-snow vehicle routes and play areas are mainly concentrated outside the NCDE recovery zone. Several management areas (MAs) prohibit snowmobile use across large portions of the Seeley Lake Ranger District (MAs 10, 11 and 12). Spring road closures are in place around Colt Creek, Morrell Falls, Richmond Peak, and Clearwater Lake to specifically protect grizzly bears from over-snow vehicle use and other motorized disturbance during the non-denning period from April 1 to June 30. The Missoula and Superior Ranger Districts have many miles of trails and roads for over-snow vehicle recreation, in addition to areas where over-snow vehicles may travel off the roads and trails, such as Lolo Creek, Mineral Peak, Shoofly Meadow, and Twin Creeks. Trails and roads that allow over-snow vehicle use are less common on the Ninemile and Plains/Thompson Falls Districts. All over-snow vehicle use on the Forest is limited by the Forest's Over Snow Vehicle Use Map.

Despite the Forest covering a large area of grizzly bear habitat, the only known denning occurs within the NCDE. Grizzly bear denning has not been recorded in the portion of the BE or CYE portions of the Forest. Grizzly bears do den in the CYE to the north of the Forest but not currently within the portion located on the Forest (BMU22).

As the grizzly bear population continues to grow and expand, grizzly bears could den within areas not previously known to have active grizzly bear denning. Grizzly bears are quite variable in their selection of denning habitat and structures (Schwartz et al. 2003). Grizzly bears usually dig dens on steep slopes where wind and topography cause an accumulation of deep snow and where the snow is unlikely to melt during warm periods. In addition, grizzly bears are more likely to den in areas with greater canopy cover and at elevations above 6,371 feet (>1,942 meters) (Mace and Waller 1997). Grizzly bears within the CYE also appear to dig dens on steeper slopes and at elevations where snow is likely to persist during the denning period but grizzly bears in the Cabinet Mountains may choose den sites starting at a lower elevation since grizzly bear dens have been recorded above 5,740 feet (about 1,750 meters) in elevation (Kasworm et al. 2022a).

Denning habitat was spatially modeled in 2015 for the NCDE since grizzly bears were denning within the ecosystem. The analysis used the best available information at the time by using unpublished grizzly bear den site data collected by Richard Mace. The model included aspect, slope class, minimum elevation, and habitat classification of den sites. The NCDE was split into zones to refine the model for local differences. For this modeling effort, the localized modeled areas included the Swan Valley, Mission-South-end, and Wilderness Zones, which overlap the portions of the Forest.

Denning habitat on the remaining portion of the Forest uses a simplified approach. To estimate denning habitat on the remaining portion of the Forest (outside the NCDE), a basic GIS exercise was completed using available data such as slope, canopy cover, and elevation as a proxy to where denning habitat could occur outside of the NCDE. Given a lack of known den sites on the Forest outside of the NCDE, this approach likely overestimates denning habitat outside the NCDE because it is a simplified approach and is not a model that incorporates finer details such as localized den site characteristics. However, this analysis, although an overestimate of the

amount of denning habitat, can provide an estimate of where denning habitat may occur. This denning habitat estimate will likely be updated as research becomes available.

Within the NCDE recovery zone, the standard NCDE-STD-AR-08 caps the amount of area available to motorized over-snow travel in modeled denning habitat during the den emergence period. No net increase in the percentage of area or miles of routes designated for motorized over-snow vehicle use is to occur on Forest lands in the NCDE recovery zone during the den emergence time period.

Over-snow vehicle use can occur on the Forest from December 1 to March 15, March 31, April 15 or April 30 depending on the location. In addition, some areas on the Forest do not have a closed season. As such, the Forest does have some areas where over-snow vehicle use may occur during the grizzly bear den emergence period. The Forest estimated the acres of overlap between denning habitat and over-snow vehicle use.

About 33 miles of over-snow vehicle use trails and/or roads pass through possible denning habitat, with about 29 of these miles open to over-snow vehicle use during the den emergence period. The NCDE recovery zone, NCDE zone 1, and the Ninemile DCA have about 24 miles open to over-snow vehicle use within possible denning habitat during the den emergence period. No trails for over-snow vehicle use are identified in the OSVUM for the CYE. No over-snow vehicle use trails or roads occur within the BE. The remaining 5 miles of over-snow vehicle use trails within possible denning habitat (currently not known to be used for denning) during the den emergence period occur in the outlying areas of the Forest (areas outside the NCDE, CYE, and BE recovery zones, NCDE zone 1, and the Ninemile DCA). It is important to note that a lack of snow can shorten the snowmobiling season regardless of the OSVUM season dates. About 206,000 acres of cross-country over-snow vehicle use on the Forest could occur within grizzly bear denning habitat during the denning period, with about 205,100 of these acres open to cross-country over-snow vehicle use during the den emergence period. About 58,200 acres of denning habitat within the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA and about 22,800 acres within the CYE Recovery Zone in BMU 22 (currently not known to be used for denning) overlap over-snow vehicle use during the den emergence period. The portion of the BE Recovery Zone on the Forest is entirely within an area closed to over-snow vehicle use, thus no acres of over-snow vehicle use overlaps potential denning habitat. Within the areas outside the NCDE, CYE, and BE recovery zones, NCDE zone 1, and the Ninemile DCA, about 124,100 acres are open to cross-country over-snow vehicle use during the den emergence period (currently not known to be used for denning). However, from a qualitative review, not all of these acres of cross-country over-snow vehicle use are available for snowmobiling due to either the ruggedness of the terrain or other logistical limitations. In addition, some areas may not be available to over-snow vehicle use after March 31st due to a lack of snow, particularly on the Plains/Thompson Falls Ranger District where conditions are largely drier and at lower elevation. Effects to grizzly bear associated with winter motorized use may vary from none to insignificant to significant effects, dependent on site-specific information. In limited circumstances, where denning habitat overlaps over-snow vehicle use during the den emergence period over-snow use, we conservatively estimate some level of potential for significant effects to occur. These effects are further described in the effects section below.

Aircraft use

The use of aircraft, including helicopters, has occurred on the Forest for several reasons but have primarily been related to prescribed burning and tree harvest, although aircraft may be used for reconnaissance and for emergency actions such as during wildland fire suppression. The use of equipment that produces noise during project implementation may be used over possibly days to weeks in an area. The combination of equipment noise and human presence likely result in some level of disturbance effects to any grizzly bears that may be in the area during the time of aircraft activity. Effects from such disturbance may range from none, to insignificant, to adverse depending on location and duration and type of activity, among other things.

The NCDE grizzly bear conservation strategy (NCDE Subcommittee 2020) identifies and provides management guidance for several factors that influence grizzly bears including potential disturbance and displacement from habitat. The NCDE grizzly bear conservation strategy identifies the potential for disturbance by recurring low-elevation (<500m) helicopter flights.

Food and Attractant Management and Site Development

On National Forest System lands, requirements for proper storage of food, garbage, or other attractants are established and enforced through issuance of special orders. The portions of the Forest within the NCDE and CYE recovery zones began issuing food/attractant storage orders in the mid to late 1980s, and subsequently have updated and expanded the spatial extents of those orders. The Forest has had a forest-wide food/wildlife attractant storage special order in place since 2011. Under the most recent food storage order (Regional order R1-2023-02, February 2023), food, carcasses, and attractants must be stored in a bear-resistant container or stored in a bear-resistant manner if they are unattended.

Forest plan standard NCDE-STD-WL-02 requires that a food/wildlife attractant storage special order be in place on Forest lands within the NCDE PCA (recovery zone), NCDE zone 1 (including the Ninemile DCA), and NCDE zone 2. The Regional food/attractant storage order applies Forest-wide and covers these areas (and more) and complies with this standard. The food/attractant storage order is an important conservation action that has reduced the potential for human-bear conflicts and mortality risk.

Developed recreation sites are sites or facilities with features that are intended to accommodate public use and recreation, such as campgrounds, rental cabins, summer homes, trailheads, lodges, ski areas, fire lookouts, visitor centers, and others. Developed sites on public lands are associated with frequent and/or prolonged human use that may include continuous or frequent presence of food and attractants. To aid in trash and food storage, the Forest has installed several bear resistant trash containers and bear resistant food storage boxes across the Forest, mostly located in campgrounds. Whether a location has a bear resistant food container or trash container or not, visitors are responsible for ensuring attractants are stored properly according to the forest-wide food/attractant storage order.

The locations of existing developed recreation sites on the Forest are shown in figure 3 in Appendix 1 of the biological assessment (U.S. Forest Service 2022). No developed recreation sites occur on the Forest within the BE recovery zone.

No specific Forest plan direction pertains to developed recreation sites within BMU 22 within the CYE recovery zone. As of June 2021, five developed day-use only sites and five developed overnight use sites occur on the Forest within BMU 22.

Within the NCDE recovery zone, standard NCDE-STD-AR-05 limits any increase in the number and capacity of developed recreation sites that are designed and managed for overnight use by the public during the non-denning season to one increase per decade per bear management unit. Guideline NCDE-GDL-AR-03 states that 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 bear management unit. Such measures could include but are not limited to additional public information and education, providing backcountry food-hanging poles or bear-resistant food or garbage storage devices, project design criteria that would limit capacity increases to those needed for public health and safety, and increasing law enforcement and patrols. A total of three developed sites with overnight use, 17 sites with day-use only, and five administrative sites occur on the Forest within the NCDE recovery zone.

No Forest Plan direction is specific to coordinating developed recreation sites with grizzly bear conservation in the portions of the Forest outside of the recovery zones. As of June 2021, a total of 27 recreation residences, 56 recreation sites with overnight use, 83 day-use only recreation sites, and 52 administrative sites occur on the Forest outside of the recovery zones.

There is no history of recurring conflicts at developed recreation sites on the Forest. No mortalities on the Forest are known or suspected to be associated with food conditioning or unsecured attractants at developed recreation sites. Given the small number of existing developed recreation sites that provide overnight use, food/attractant storage orders and policies that are in place, and Forest Plan direction that discourages expansion of developed recreation sites, the existing environmental baseline with regard to developed recreation on the Forest may cause disturbance of individual bears but is unlikely to rise to the level of adverse effects by causing habitat displacement or food-conditioning of grizzly bears.

Dispersed recreational opportunities as well as non-motorized (e.g. hiking, horseback, mountain biking) recreation also occur throughout the Forest. Dispersed recreation consists of those activities that take place outside of developed recreation areas. Dispersed sites generally do not have fees associated with them and have little or no facilities such as toilets, tables, or garbage collection. Types of dispersed activities that occur on the Forest include, but are not limited to, camping, hiking, fishing, skiing, hunting, gathering huckleberries, horseback riding, river use, and snowmobiling.

Dispersed recreation occurs across much of the Forest, but typically occurs in close proximity to motorized routes. However, opportunities exist for non-motorized cross country (e.g. hiking or horseback) dispersed recreation, especially for game hunting purposes where people may access areas not commonly visited by people. In other words, much of the dispersed recreation that occurs on the Forest is occurring in close proximity to motorized routes and if it occurs away from motorized routes the use is typically non-motorized. As such, the existing environmental baseline with regard to dispersed recreation on the Forest may cause disturbance of individual

bears but is unlikely to rise to the level of adverse effects by causing habitat displacement or food-conditioning of grizzly bears.

Livestock Management

The Forest has 11 active grazing allotments: two within the recovery zones (1 NCDE, 1 CYE), two within NCDE zone 1 and the Ninemile DCA (one in each), and seven outside of the recovery zones, NCDE zone 1, and the Ninemile DCA. None of these allotments are for domestic sheep or other small livestock. These active cattle allotments encompass 80,878 acres, or 3.6 percent of the Forest. Table 5 displays these allotments by areas of the Forest, inside and outside of the recovery zones.

Table 5. Active livestock grazing allotments on the Forest (U.S. Forest Service 2022).

	Number of active cattle allotments	Acres of active cattle allotments	Number of domestic sheep allotments
BE recovery zone	0	0	0
CYE recovery zone	1	78	0
NCDE recovery zone	1	220	0
NCDE Zone 1	1	1,984	0
Ninemile DCA	1	6,830	0
Remainder of Forest	7	71,766	0
Totals	**11**	**80,878**	**0**

Over the life of the Forest Plan, the number of grazing allotments has substantially decreased. In 1986, the Final EIS for the Lolo Forest Plan disclosed that there were 128 range allotments, 14 of which were for wilderness pack stock with the remainder for non-wilderness grazing. About 60 percent of the allotments were active and about 40 percent were inactive at that time. Forest Plan direction indicates for each Management Area whether or not livestock grazing will be permitted. Additional guidance for Range Practices is provided for MA-12 Wilderness, MA-14 riparian, and MA-20 grizzly bear habitat, which is primarily aimed at avoiding overutilization of forage in areas where cattle naturally tend to congregate.

No known incidents of grizzly bear mortality or grizzly bear-human conflict have occurred on the Forest as the result of livestock grazing-related management subsequent to the listing of the grizzly bear as Threatened in 1975. Permits for grazing by saddle and pack animals are granted primarily in support of outfitter and guide operations or Forest administrative use in wilderness areas. No history of conflicts between grizzly bears and horses/mules due to depredation or forage competition occurs on the Forest.

Honeybees, classified as livestock in Montana (MCA 15–24–921), can attract grizzly bears. While some apiaries occur on private land, none occur on the Forest. Forest Plan standard NCDE-STD-SFP-01 requires special-use permits for apiaries (beehives) located on Forest lands to incorporate measures, including electric fencing to reduce the risk of grizzly bear-human conflicts as specified in the food/wildlife attractant storage special order. Effects associated with livestock management are expected to be insignificant and are further described in the effects section below.

Vegetation and Fire Management

The existing environmental baseline is characterized by a forested matrix with early successional stages created by vegetation management and wildfires. The current environmental baseline provides a variety of bear foods while maintaining a mosaic of food and cover. The Forest Plan established a forest-wide objective to "provide for the maintenance of a diverse mosaic of vegetational development, well distributed across the Forest to ensure ecological integrity". Vegetation treatment, including prescribed fire, is encouraged to improve habitat for various wildlife species and groups. Harvesting has been used within the action area as a tool used to achieve a variety of resource objectives, including but not limited to lowering fuels and fire risk; establishing desired tree species; improving tree growth; reducing impacts of insects or disease; contributing wood products to the local economy; improving wildlife habitat; and salvaging the economic value of trees killed by fire or other factors.

All of the Forest land within the BE recovery zone is designated as Wilderness, where natural processes generally predominate without human intervention. The Forest Plan does not have specific direction to coordinate vegetation management with grizzly bear conservation in the CYE recovery zones or outside of the recovery zones. Vegetation management within the NCDE recovery zone includes desired conditions and guidelines that address considerations for the timing of activities to reduce the risk of disturbance/displacement, encouraging bear foods and retaining cover, and cessation of activities if needed to resolve a grizzly bear-human conflict situation. Standards for maintaining hiding cover to benefit big game and other species also benefit grizzly bears. Vegetation management must also adhere to other grizzly bear related guidance, including standards regarding motorized route density and food storage orders.

Under the Forest Plan, approximately 1,239,000 acres (about 56 percent of the action area) are identified as suitable for timber production. Timber production is the purposeful growing, tending, harvesting, and regeneration of rotational crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of Forest planning, timber production does not include production of fuelwood or harvest from unsuitable lands. The 1986 Forest Plan, recognizing the need to protect soil and water resources and other multiple uses, projected that the average annual harvest would be 133 MMBF during the 2001-2030 time period (U.S. Forest Service 2022).

A 2000-2001 Forest Plan Monitoring Report that provided a comparison of projected versus actual annual average acres treated during 1987 through 2001 by various silvicultural activities displayed that much less regeneration harvest (clearcut, seed tree and shelterwood) actually occurred than had been projected and more commercial thinning occurred than had been projected, during that time period. An annual average of the following occurred during that time period: 1,876 acres of clearcut and seed tree harvest, 726 acres of shelterwood harvest, 319 acres of overstory removal, 215 acres of selection harvest, 887 acres of sanitation and salvage harvest, 434 acres of commercial thinning, and 861 acres of timber stand improvement. The 2020 Forest Plan Monitoring Report also summarized timber program accomplishments for the period 2018 to 2020. The average acres of regeneration and intermediate harvests over the three-year period was 5,562 acres, a substantial increase compared to the earlier time period, yet still well below the Forest Plan projection. In addition, the Forest reported that an average of 5,980 acres of mechanical fuels treatments not related to timber harvest were completed from 2018 to 2020.

The biological assessment used the available reports to provide information on silvicultural actions, which have a large gap between reporting years. Given the gap in monitoring reports, the Forest provided the following additional information to the Service, which was pulled from the Forest's database of record for their vegetation accomplishments (FACTS). The acres presented in the 2000-2001 and 2020 Forest monitoring reports represented those acres of vegetation actions that went into contract for those fiscal years and not when the actions were completed on-the-ground. Typically, there is a delay between when a contract is executed, and the action occurs on the ground. Sometimes the delay could be years. In these circumstances, the reported acres of executed contract acres could be larger than what is accomplished on the ground for that fiscal year.

To provide a more accurate estimate of silviculture actions completed each year, the following information from the Forest represents those acres of silviculture actions completed on-the-ground. Due to how the data was compiled, the results are not necessarily comparable to those acres presented in the 2000-2001 and 2020 Forest monitoring reports. Over the past 10 years, the Forest has completed various silvicultural actions that can be divided into commercial (regeneration and intermediate harvest) and non-commercial actions. On average, across the past 10 years (2012-2021), the Forest has completed about 1,200 acres of regeneration harvest, 900 acres of intermediate harvest, and 1,500 acres of non-commercial harvest per year. However, the acres of silvicultural actions have steadily increased over the last 10 years, especially over the most recent 3 years.

Wildfire has a strong influence on the age distribution and spatial arrangement of Forest vegetation. The Forest typically experiences wildfire on an annual basis. Based on available GIS data, the Forest had 550 wildfires burning about 344,972 acres over the past 5 years (2017-2021). Wildfires ranged in size from less than 1 acre to several thousands of acres in size, such as in 2017 where wildfires burned about 228,000 acres. The size and severity of wildfires is expected to continue to increase due to climate change.

While most fires start naturally and are not federal actions, prescribed fires, burnouts, or backburns may be lit by fire crews during a wildfire incident as an import tool to protect values at risk. Prescribed fire operations are conducted under conditions such that ignition would be completed when fire behavior is expected to be minimal (time of day, relative humidity, etc.). Prescribed fire ignitions are implemented in a manner that focuses on reducing fuels prior to the wildfire reaching those areas in an attempt to reduce the spread and intensity of the wildfire.

The following information provides a brief summary of general wildfire suppression actions that may be used during a wildfire. The additional information received during consultation provides a detailed description of fire suppression actions. Wildfire suppression generally involves a designated incident command post, which houses all fire support services including daily briefings, support component tents, fire crew sleeping areas, food service facilities, and parking. Occasionally firefighter support is needed far from the original incident command post (ICP) and spike camps are established. Suppression actions include the use of hand line, machine line, drop points, and shaded fuel breaks. These vary in size depending on the fire and fire conditions. Water sources are also used for suppression actions and include aircraft dip sites and draft sites from which water trucks and portable pumps draw water. Fire retardant and water enhancers are also used when fires pose a direct threat to public safety. These are delivered by helicopter and airplanes directly to leading fire edges to reduce burn intensity or to vegetation immediately

ahead of the advancing edge to reduce available fuels. Explosives are occasionally used by fire crews to remotely fall snags or create fireline in areas that would be too hazardous to be done directly by hand. Traffic on existing roads in and around fires tends to increase with the degree of road use varying by fire size and duration. Roads can also be affected by heavy equipment traffic and log skidding. Immediately after a fire, interdisciplinary Burned Area Emergency Response (BAER) teams are used to review burned landscapes to assess the need for emergency stabilization treatments to minimize threats and degradation to values at risk. Actions that may occur under BAER often include stabilizing roads and trails by replacing or repairing drainage structures and repairing trail and road surfaces. Seeding or other techniques to stabilize soils may also occur under BAER.

Effects to grizzly bears associated with vegetation and fire management range from minimal disturbance to significant displacement depending on the site specific circumstances such as location, duration, habitat affected, and motorized access conditions, among other activities. These effects are further described in the effects section below.

Energy and Mineral Exploration and Development

The production of oil and natural gas on federal lands is conducted through a leasing process under the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (PL 100–203). Mineral development refers to surface and underground hardrock mining and coal production, which is regulated by permits on National Forest System lands under the Mining Act of 1872, as amended through PL 103–66. The Mineral Materials Act of 1947, as amended through PL 96–470, provides for the sale or public giveaway of certain minerals such as sand or gravel.

The potential for oil and gas resources on the Forest is considered to be low. No gas or oil exploration or development is occurring on the Forest at this time, thus no ongoing effects are occurring. Two active gold mines and one quartz crystal mine are located on the Forest. All three mines are located in the area outside the NCDE recovery zone, NCDE zone 1, Ninemile DCA, CYE recovery zone, and BE recovery zone. Each of these mines has less than 1/2 acre of surface disturbance.

The Forest-wide Standard 41 requires: “Before oil and gas lease stipulation recommendations are made, site specific analysis of environmental effects will be made. Stipulations, which are based upon the 1982 Environmental Analysis for Oil and Gas of Non-wilderness Lands on the Forest, 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.” Thus, the magnitude of effects from leasable or locatable minerals exploration and development would be limited by provisions of the 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.

Additional forest plan desired conditions, standards, and guidelines specific to the NCDE recovery zone, NCDE Zone 1, and the Ninemile DCA, are designed to avoid, minimize, and/or mitigate impacts to grizzly bears or their habitat, subject to valid existing rights. For example, the standards address cessation of activities if needed to resolve a grizzly bear-human conflict,

proper handling of food and garbage, possible timing restrictions on seismic and/or ground-disturbing activities, and a requirement for a no surface occupancy stipulation on any new leases.

Effects to grizzly bears associated with energy and mineral exploration and development range from minimal disturbance to significant displacement depending on the site specific circumstances such as location, duration, habitat affected, and motorized access conditions, among other activities. These effects are further described in the effects section below.

Connectivity

Dispersal between disjunct populations can play an important role in the persistence of a species by increasing genetic diversity, facilitating colonization and recolonization of unoccupied habitats, and augmenting the numbers of small populations (Mattson and Merrill 2002). Proctor et al. (2012) used genetic data from 3,134 grizzly bears along with radio telemetry location data from 792 grizzly bears across western Canada and northern United States to assess large-scale movement patterns and genetic connectivity among bear populations. In the northern, more remote portion of their distribution in Canada, grizzly bear populations were found to be well connected, with movement, dispersal, and gene flow influenced by distance and natural topographic features (e.g., icefields), as would be expected. In contrast, in the southeastern part of their distribution, rates of movement and genetic interchange were impaired. Population fragmentation in these areas was associated with human settlements, highways, and human-caused mortality.

Young female grizzly bears usually establish home ranges that overlap with their mother's (Blanchard and Knight 1991). McLellan and Hovey (2001) measured the distances between the home range center of a mother and those of her dispersed offspring (30 offspring, 12 females and 18 males) over 20 years. They reported that females dispersed, on average, 5.9 miles from their maternal home range, whereas males dispersed 17.9 miles. Using genetic analysis of 711 grizzly bears in southwestern Canada, Proctor et al. (2004) estimated that females, on average, dispersed 8.6 miles from the center of the natal home range; males, on average, dispersed 25 miles from a natal or maternal home range. Proctor et al. (2012) found that male grizzly bears generally move more frequently and over longer distances than females. The estimated maximum dispersal distances were about 47 miles for a female and 104 miles for a male (Ibid.). The distance between the known distributions of the NCDE and GYE, and from the NCDE distribution to the BE are approaching or within the dispersal range of male bears.

A goal of the recovery plan for the CYE is to attain a population of approximately 100 animals (U.S. Fish and Wildlife Service 1993). Because of the small size of this recovery zone, achieving and maintaining the population goal will require connectivity with other grizzly bear populations to maintain genetic health over time. Kasworm et al. (2022a) summarized data on movements of bears into and out of the Cabinet-Yaak recovery zone. A pilot program tested the feasibility of population augmentation by releasing four subadult female bears with no history of conflicts with humans from southeast British Columbia into the Cabinet Mountains during 1990 to 1994. Success of the augmentation pilot program prompted additional augmentation, with ten female bears and eight male bears moved from the Flathead River to the Cabinet Mountains during 2005 to 2021. Four of these individuals were killed during their first year and one was killed after 16 years. Eight of the bears left the target area for augmentation, but three returned and one was recaptured and brought back. Five individuals (3 females and 2 males) are known

to have contributed to reproduction. The augmentation effort appears to be the primary reason grizzly bears have persisted and are increasing in numbers in the Cabinet Mountains (Kendall et al. 2016, Kasworm et al. 2022a).

During the period 1983 to 2021, 41 grizzly bears were identified as immigrants or emigrants to or from the CYE. Twenty-seven individuals (24 males and 3 females) are known to have moved into the CYE from adjacent populations including the North Purcells (17), NCDE (5), and South Selkirks (7). Of these, 11 were killed, removed, or emigrated out of the CYE prior to any known gene flow. Gene flow has been documented through reproduction by 4 immigrants from the North Purcells producing 14 offspring in the CYE (Kasworm et al. 2022a).

These observations suggest that movement between grizzly bear populations is possible under the conditions of the environmental baseline. The NCDE appears to be capable of serving as a source population for the CYE, based on its large, increasing population size and its expanding distribution (NCDE Subcommittee 2020), although only a few bears have moved from the NCDE to the Cabinet-Yaak to date. Some large roadless land areas occur immediately south of BMU 22 that may help facilitate connectivity between the Cabinet-Yaak and the Bitterroot recovery zones in the future.

The assessment of genetic health of the CYE provided in the SSA (U.S. Fish and Wildlife Service 2022a) is predicated on the management goal of the CYE entity being one population. Previously, prior to 2012, no movement was seen between the Yaak and the Cabinets. However, recent monitoring of grizzly bear movements have shown events toward reconnecting the Cabinets and Yaak portions with male grizzly bears being documented in this area in several instances over the last 10 years (Kasworm et al. 2022a). Though gene flow has not been detected, the SSA attempts to conservatively assess the genetic health of the CYE based on the Cabinets portion of this population and this lack of demonstrated gene flow (U.S. Fish and Wildlife Service 2022a). While genetic issues may be a concern for the small CYE population in the longer term, demographic concerns currently outweigh those genetic concerns. Movement from other populations into the Yaak portion of the CYE recovery zone and the continued augmentation from the NCDE reduce the level of concern associated with the small population size. While isolation of the CYE remains a concern, recent data indicate increasing movements by males and females and subsequent reproduction, resulting in limited but increasing population connectivity, particularly in the Yaak portion of the CYE (*Ibid.*).

The NCDE, SE, and CYE populations could serve as a source of grizzly bears for the unoccupied BE. It would require movement of both male and female grizzly bears to establish a population in the BE. Females disperse less often and for shorter distances than males, thus occupancy by female bears is likely to take much longer to achieve than occupancy by male bears. The distribution of grizzly bears in northwestern Montana has been expanding and the environmental baseline conditions on the Forest appear to be compatible with supporting movement of grizzly bears from the CYE or NCDE recovery zones to the BE recovery zone.

It is estimated that periodic immigration (one to two male migrants every 10 years) would be sufficient to provide for genetic connectivity of the greater Yellowstone ecosystem (GYE) (Miller and Waits 2003). The NCDE appears to be more than capable of serving as a source population for other grizzly bear populations, including the GYE, based on its large, increasing population size and its expanding distribution (NCDE Subcommittee 2020). Several potential

linkage areas have been identified that could facilitate the natural movement of grizzly bears into the GYE (Servheen et al. 2001). Peck et al. (2017) used GPS telemetry data from 173 male grizzly bears in the NCDE and the GYE and a new analysis method (randomized shortest path algorithm and step selection function models) to identify possible routes for male-mediated gene flow. These models depicted numerous potential paths from the NCDE to the GYE. The more likely pathways to connect the NCDE and GYE grizzly bear populations are through the Tobacco Root/Boulder Ranges, the Flint Creek/Garnet Ranges, or the Bridger/Big Belt Ranges. The Sapphire Mountains were predicted to have at least a low potential for movement under all models. The predicted paths were corroborated by the locations of confirmed observations of 21 grizzly bears located 4.8 miles or more outside the two occupied ranges. The closest proximity is about 66 miles, between the Boulder and Madison Mountain ranges. The authors concluded that the probability of successful natural dispersal from the NCDE into the GYE remains low, due to the distance between the current occupied ranges and large intervening areas of inter-mountain valleys encompassing human settlements, highways, and agriculture.

Forest-wide goal 7, "For threatened and endangered species occurring on the Forest, including the grizzly bear, gray wolf, peregrine falcon, and bald eagle, manage to contribute to the recovery of each species to non-threatened status" and desired condition NCDE-DC-WL-02, "Within the NCDE primary conservation area and zone 1 (including the Ninemile demographic connectivity area), grizzly bear habitat on NFS lands contributes to sustaining the recovery of the grizzly bear population in the NCDE and contributes to connectivity with neighboring grizzly bear recovery zones" will encourage management actions that do not impair and may enhance habitat connectivity and genetic exchange between recovery zones. Secure habitat provides an important component to habitat connectivity. While the Forest Plan does not have standards requiring management of secure habitat outside the recovery zones, certain Forest Plan management areas limit or restrict construction of motorized routes, as previously described. The NCDE grizzly bear population has been increasing in numbers and expanding its range, and the NCDE grizzly bear conservation strategy and associated NCDE grizzly bear amendment standards and guidelines are aimed at maintaining or increasing the population. We anticipate that under continued implementation of the Forest Plan, the NCDE population will be capable of serving as a source population for other recovery zones where the bear population is smaller or absent.

Climate Change

In SSA, the Service examined climate change and potential effects on grizzly bears (U.S. Fish and Wildlife Service 2022a). The most likely ways in which climate change may potentially affect grizzly bears are: a reduction in snowpack levels, shifts in the denning season, shifts in the abundance and distribution of some natural food sources, and changes in fire regimes due to summer drought. The potential positive and negative effects would likely be variable and are difficult to predict.

Reduced snowpack or a shorter winter season possibly may improve over-winter survival of bears, assuming that sufficient bear foods are available later in the fall and earlier in the spring (Ibid.). However, a shorter denning period could increase the potential for spring and fall encounters between grizzly bears and hunters and/or recreationists, which in turn would increase the risk of mortality to grizzly bears (Servheen and Cross 2010).

Temporal and spatial shifts in food sources available to grizzly bears may occur and have been documented (U.S. Fish and Wildlife Service 2022a). The extent and rate to which individual plant species or plant communities are impacted by climate change is not possible to predict with any level of confidence (Fagre et al. 2003, Walther et al. 2002). However, there is general consensus that grizzly bears are flexible enough in their dietary needs that they are not and will not be impacted directly by changes in food sources due to climate change (Servheen and Cross 2010). It is anticipated that grizzly bears will be able to adapt to future potential changes in food availability because of the flexibility in their diets and the large range of foods available due to the varying climate, topography, and vegetative conditions within the ecosystems, which provide a variety of habitats and foods for grizzly bears to consume (U.S. Fish and Wildlife Service 2022a). For example, grizzly bears will eat almost anything available including vegetation, living or dead mammals or fish, insects, and human garbage (Ibid.).

Whitebark pine, a potential food source for grizzly bears (particularly in the GYE), is a species in decline across its range and has been recently listed as a threatened species under the ESA. As a result of widespread mortality of whitebark pine from blister rust, whitebark pine has been functionally extinct as a resource for grizzly bears in the NCDE for the past 40 years (Ibid.). Whitebark pine is not considered as a food resource for grizzly bears in the CYE (Ibid.). Therefore, the overall decline in whitebark pine throughout its range is not expected to result in effects to grizzly bears that use the action area. They have adapted and/or continue to use other food resources and both populations have experienced an increase in their numbers over the same time whitebark pine has been in decline.

Fire frequency and severity may increase as a result of climate change. Increases in fire frequency could result in improvements to grizzly bear forage, with low to moderate severity fires being most beneficial (U.S. Fish and Wildlife Service 2022a). Wildfires that convert mature forest to early successional condition alter the availability of grizzly bear foods and cover, potentially changing how bears use the landscape in the short-term. However, decreases in forest cover could benefit grizzly bears by increasing the production of shrubs, berries, and root crops in the years following fires, provided that appropriate hiding cover remains available.

Grizzly bears are habitat generalists and opportunistic omnivores, which may make them less susceptible to changes in plant communities than some other species of wildlife. We expect that grizzly bears would adapt to future changes in habitat and food sources caused by climate change. Because of the plasticity in their diets, it is expected they will be able to switch foods according to which foods are most nutritious and available (Ibid.). The continuing effects of climate change appear to be unlikely to reduce the ability of the Forest to support a population of grizzly bears and the movement of grizzly bears between recovery zones. As conservation plans and strategies as well as mortality limits are in place, the SSA expected that negative effects of climate change on grizzly bears will be limited. The SSA (Ibid.), incorporated by reference, has further information on the effects to grizzly bears associated with climate change.

Other forest management actions that are part of the baseline

In addition to the main programs and activities discussed above, other federally authorized activities occur on the Forest that could potentially affect grizzly bears. Activities such as road and trail maintenance, noxious weed control, maintenance and use of communication towers and other utilities, and gathering of firewood and other miscellaneous forest products may occur on

an annual or infrequent interval. These types of activities are typically of low intensity and short duration. They may cause local disturbance to individual grizzly bears that are in the immediate vicinity.

These various past and present activities are ongoing and are part of the current baseline habitat conditions experienced by grizzly bears. It is important to note that these authorized activities were occurring during the period when research showed that the NCDE and CYE grizzly bear populations were stable to increasing in numbers and distribution. These activities are evaluated site-specifically during project analysis.

Existing Projects and Consultations

Several projects and consultations are ongoing on the Forest and are likely to continue after the completion of this biological opinion. Consultation with the Service has been completed for these actions, thus the actions are included in the environmental baseline as some of the effects associated with the existing consultations are likely to continue. Some consultations will be superseded by this biological opinion while others will continue to remain valid. This biological opinion on the continued implementation of the Forest Plan will supersede four biological opinions that are associated with the existing Forest Plan, including the 2004 biological opinion on the Forest Plan and associated 2012 amended incidental take statement, the 2011 biological opinion on the final access management strategy for the Swan subunit in the NCDE, the 2011 biological opinion on the access amendment to the Forest Plan for the CYE, and the 2017 biological opinion on the NCDE grizzly bear amendments. These projects and consultations are summarized below.

2004 Biological Opinion and 2012 Amended Incidental Take Statement on the Forest Plan

In 2004, the Service and Forest consulted on the effects of continued implementation of the Forest Plan on grizzly bears. The consultation applied to areas on the Forest that were situated within the NCDE recovery zone and some areas outside of the designated NCDE recovery zone that were included in the recognized distribution area for grizzly bears as of the 2004 consultation. In 2012, as grizzly bears continued to expand and based on new information on the status of grizzly bears, the Service issued an amended incidental take statement associated with the 2004 biological opinion that continued to apply to the areas of the Forest within the NCDE recovery zone and some areas outside of the NCDE recovery zone, which included some expanded areas of distribution over the 2004 conditions but not the entire Forest. Three program areas were the focus of the 2004 biological opinion: access management, food and attractant storage, and livestock grazing. Since this 2023 biological opinion is also analyzing the effects of the continued implementation of the Forest Plan on grizzly bears, but further expanding the analysis to the entire Forest, the 2004 biological opinion and 2012 amended incidental take statement (U.S. Fish and Wildlife Service 2004, 2012) are superseded by this 2023 biological opinion on the continued implementation of the Forest Plan.

Related to motorized access management, the effects to grizzly bears were previously analyzed (2004, 2012) using only an estimate of acres of low, moderate, or high levels of motorized route density. As explained above, providing the acreage of low, moderate, and high levels of motorized use gives an idea of the amount of roads in the action area, however it does not represent how these routes occur on the landscape. Secure habitat has been identified as one of

the key issues related to effects of motorized access on grizzly bears and is important to the survival and reproductive success of grizzly bears. While secure habitat is directly tied to and based on open and restricted motorized routes, it more adequately represents the potential effects to grizzly bears related to motorized access as it provides a more accurate indication of the spatial mix of motorized routes and secure habitat. As such, we have incorporated secure habitat into the analysis for this 2023 biological opinion, which is different than how we analyzed effects in 2004 and 2012. In addition, we previously issued an amended incidental take statement in 2012 that limited the amount of new permanent road construction to 7.14 miles of road. In order to better represent the effects to grizzly bears from motorized access, this 2023 biological opinion and incidental take statement will analyze how new and temporary route construction affects secure habitat rather than providing a limit to the amount linear miles of road construction (see effects section and incidental take statement below).

2011 Biological Opinion on the Final Access Management Strategy for the NCDE Swan Subunit

The 2011 consultation on the final access management strategy for the Swan subunit analyzed the effects of reaching and maintaining the subunit at an OMRD of 22 percent during the spring and 31 percent during the fall, a TMRD of 17 percent, and a secure core of 55 percent. The Forest had met these conditions in 2011. Since the final access management strategy for the Swan subunit would maintain OMRD and secure core conditions that are worse than the research benchmarks for the NCDE, high open road densities, along with lower amounts of secure core, would continue to occur within the subunit indefinitely. Therefore, the access management strategy for the Swan subunit would likely result in adverse effects to some individual grizzly bears that may attempt to live in the Swan subunit and the 2011 biological opinion and incidental take statement on the final access management strategy for the Swan subunit was issued. While the Swan Subunit has met the Final Access Management Strategy for the Swan Subunit, the metrics have changed since consultation. The changes are partly a result of projects improving the OMRD, TMRD, and secure core and partly a result of updating the baseline conditions. As allowed under the NCDE grizzly bear amendments, updates to the baseline conditions occurred when better information became available (such as improved mapping accuracy) and when the Forest acquired land. All of the updates are documented in the NCDE Biennial Reports and are allowable updates to the baseline. The current conditions (2021) are documented in Table 2 above. Rationale for changes in the metrics can be found in the 2021 monitoring report (Ake 2022). As all updates fall under the exceptions, the updated information does not violate the standard to maintain conditions as of December 2011 with allowable updates and the standard associated with the baseline motorized access conditions is being met. In addition, some level of temporary road construction was also considered in the 2011 biological opinion. The effects of temporary road construction were subsequently addressed in the consultation on the 2018 NCDE grizzly bear amendments (for which the biological opinion is also being superseded as described below). Since the Forest has previously met the conditions under the final access management strategy for the Swan subunit and continued access management for the Swan subunit will be managed under the continued implementation of the Forest Plan, including the NCDE grizzly bear amendments, the biological opinion on the effects of the final access management strategy for the Swan subunit (U.S. Fish and Wildlife Service 2011a) is no longer relevant and is superseded by this 2023 biological opinion on the continued implementation of the Forest Plan.

2011 Biological Opinion of the Motorized Access Direction for the CYE Portion of the Forest

In 2011, the Lolo, Kootenai, and Idaho Panhandle Forest plans were amended with direction for motorized access management within the CYE and Selkirk Ecosystem (SE) recovery zones (2011 access amendment). Based on research by Wakkinen and Kasworm (1997), within the CYE recovery zone, research benchmarks for OMRD, TMRD, and secure core describe that adverse effects to grizzly bears are likely to occur when OMRD exceeds 1 mile per square mile in more than 33 percent of the subunit, TMRD exceeds 2 miles per square mile in more than 26 percent of the subunit, and secure core is not at least 55 percent of the subunit during the non-denning period.

The Forest's BMU-specific standards for the only BMU (BMU 22) on the Forest are to maintain no more than 33 percent OMRD, no more than 35 percent TMRD, and provide at least 55 percent secure core. TMRD was set higher than the research benchmark because the amount and pattern of private ownership precludes attaining 26 percent. In January 2020, the Service amended the 2011 biological opinion to extend incidental take coverage for the Forest's portion of the CYE recovery zone through November 2022, or the date of completion of ongoing actions bringing the Forest into compliance with the access standards, whichever occurred first. Since consultation in 2011 on the access amendment and the amendment issued in 2020, as of February 2022, the Forest has brought BMU 22 into compliance with these standards. While BMU 22 meets the standards for OMRD, TMRD, and secure core, the standard for TMRD remains above the research benchmark of having no more than 26 percent TMRD. As such, it is likely that the existing motorized access conditions in BMU 22, specifically TMRD, will continue to cause some level of disturbance and displacement that may result in adverse effects to individual grizzly bears that may be present within the BMU. The effects of such are analyzed in the baseline section above as well as the effects section below. In addition to standards associated with OMRD, TMRD, and secure core, other direction was also provided under the 2011 access management direction regarding secure core and administrative use. For more specific details see the baseline section above for the CYE recovery zone, effects section below, as well as Appendix 2 of the biological assessment (U.S. Forest Service 2022). As the 2011 access management standards were amended to the Forest Plan and we are including the effects of such in this 2023 biological opinion, the portion of the biological opinion on the effects of the 2011 access amendment related to the Lolo National Forest, including the 2020 amended biological opinion, (U.S. Fish and Wildlife Service 2011b, 2020) are superseded by this 2023 biological opinion on the continued implementation of the Forest Plan.

2017 Biological Opinion on the NCDE Grizzly Bear Amendments

In 2018, the Forest Plan was amended to incorporate management criteria from the NCDE grizzly bear conservation strategy (NCDE grizzly bear amendments). In general, the NCDE grizzly bear amendments incorporated management criteria regarding motorized access management, over-snow travel, developed sites, livestock grazing, vegetation management activities, mining and oil and gas exploration and development. Information and analysis associated with the NCDE grizzly bear amendments are described in the various sections above and below rather than in this section as an existing project as it is current Forest Plan direction. The direction under the NCDE grizzly bear amendments is also fully detailed in Appendix 2 of the biological assessment (U.S. Forest Service 2022). As the measures under the NCDE grizzly bear amendments were amended to the Forest Plan and we are including the effects of such in

this 2023 biological opinion, the portions of the 2017 consultation on the NCDE grizzly bear amendments applicable to the Lolo National Forest (U.S. Fish and Wildlife Service 2017) are superseded by this 2023 biological opinion on the continued implementation of the Forest Plan.

Table 6. Ongoing Projects with Completed Section 7 Consultation.

Project Name	Ranger District	Work Completed on the Ground
Sawmill-Petty Project	Ninemile Ranger District	No on the ground work has started
Center Horse TAP	Seeley Lake Ranger District	No on the ground work has started
Rice Ridge Salvage	Seeley Lake Ranger District	Work has been completed except for pile burning and landing rehabilitation
Liberty Fire Salvage	Seeley Lake Ranger District	Work has been completed except for landing rehabilitation
Cruzane Mountain Project	Superior Ranger District	No on the ground work has started
D7 Access Requests	Superior Ranger District	No on the ground work has started
A-BLT	Plains/Thompson Falls Ranger District	No on the ground work has started
BMU 22 Compliance	Plains/Thompson Falls Ranger District	Motorized route work in progress
Thorne Fire Salvage	Plains/Thompson Falls Ranger District	No on the ground work has started
Sorrel Springs	Ninemile Ranger District	No on the ground work has started
Fryxel Access Request	Plains/Thompson Falls Ranger District	No on the ground work has started
Jam Cracker	Superior Ranger District	Thinning
12 Tamarack	Superior Ranger District	Thinning
Cedar Thom	Superior Ranger District	Thinning
Swamp Eddy	Plains/Thompson Falls Ranger District	Thinning
Fish Trap	Plains/Thompson Falls Ranger District	Thinning
Forestwide Integrated Weed Management Analysis	All Ranger Districts	Continuation of weed management
Lookout Pass Ski Area Expansion	Superior Ranger District	Maintenance of facilities and ski area

Table 6 above lists other site-specific ongoing projects that have completed section 7 consultation. Only projects that have completed section 7 consultation are considered as part of the baseline. The biological assessment provided information for other projects that are within the consultation process but since consultation has not been completed they were presented for tracking purposes only and are not considered as part of the baseline condition. While all projects for which consultation has been completed are considered as part of the baseline conditions, only the effects of the projects or portions of projects that have been completed or are currently occurring on-the-ground are reflected in the existing, baseline condition and/or metrics displayed above.

EFFECTS OF THE ACTION

Under section 7(a)(2) of the Act, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 C.F.R. § 402.02). The effects discussed below are the result of implementing the proposed action.

Motorized Access

General Effects of Motorized Access on Grizzly Bears

This section provides a general discussion of direct and indirect effects of motorized access management on grizzly bears as affected by motorized route densities. Research has confirmed adverse impacts of roads on grizzly bears (IGBC 1987, Mace et al. 1996, Mace et al. 1999, Proctor et al. 2018, Proctor et al. 2019). Negative impacts associated with roads and high road densities influence habitat use patterns of individual grizzly bears as well as the population. Proctor et al. (2019) found that motorized access affects grizzly bears at the individual level by affecting habitat use, home-range selection and the ability to move across the landscape. The same study concluded that effects of motorized access on individual bears also results in effects at the population level due to habitat fragmentation, and decreased survival and reproductive rates.

Displacement and security. Many grizzly bears under-use or avoid otherwise preferred habitats that are frequented by people. Not all avoidance results in significant impacts to grizzly bears. However, if road densities, and associated secure habitat, reach a level that such under-use of preferred habitat represents modification of normal grizzly bear behavior, grizzly bears may experience significant impacts. Negative association with motorized routes arises from the grizzly bears' response to vehicles, vehicle noise and other human-related noise around roads, human scent along roads, and hunting and shooting along or from roads. Grizzly bears that experience such negative consequences learn to avoid the disturbance and annoyance generated by motorized routes. Some may not change this resultant avoidance behavior for long periods after road closures. While occasional human-related vehicle noise can result in annoying some grizzly bears to the extent that they continue to avoid roaded habitat, other grizzly bears are able to adjust their behavior rather than avoid the habitat (such as using the habitat at night).

All factors contributing to direct links between roads and displacement from habitat have not been quantified. The level of road-use by people is likely an important factor in assessing the potential displacement caused by any motorized route. Grizzly bears were consistently 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).

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. In Montana, Mace and Manley (1993) reported use of habitat by all sex and age classes of grizzly bears was less than expected in habitats where total road densities exceeded 2 miles per square mile. Twenty-two percent of the South Fork Study area exceeded 2 miles per square mile. Adult grizzly bears used habitats less than expected when open motorized access density exceeded 1 mile per square mile. Further, female grizzly bears in the South Fork Study area tended to use habitat more than 0.5 mile from roads or trails greater than expected. As traffic levels on roads increased, grizzly bear use of adjacent habitat decreased (Mace et al. 1996). In Yellowstone, Mattson et al. (1992) reported wary grizzly bears avoided areas within 2 kilometers (1.2 miles) of major roads and 4 kilometers (2.4 miles) of major developments or town sites.

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). However, adult females were more likely to avoid humans altogether, rather than seek out the highest quality habitats that may be near roads. Mueller et al. (2004) reported all age and sex classes used habitats closer to high-use roads and development during the human inactive period. All bears in the study showed a considerably greater avoidance of high-use roads and development during periods of high human activity. They did show however, that regardless of the time of day, subadult bears were found closer to high-use roads than adult bears. Gibeau et al. (2002) also demonstrated that subadults were almost always closer to human activity than adults. Boulanger and Stenhouse (2014) found that subadult grizzly bears were most vulnerable to road-based mortality.

Mace et al. (1996) and other researchers have used 500 meters as the zone of influence around roads. Waller and Servheen (2005) also demonstrated avoidance of areas within 500 meters of U.S. Highway 2. 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 known 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. Gibeau and Stevens (2005) documented bears further from roads when distant from high quality habitat, indicating avoidance behavior.

Research suggests that grizzly bears benefit from road closures aimed at minimizing traffic on roads within important seasonal habitat, especially in low elevation habitats during the spring (Proctor et al. 2019, McLellan 2015, Mace et al. 1999). Proctor et al. (2019) described

management of motorized access as most beneficial in areas where roads occur in high quality habitat, especially within and adjacent to linkage areas between population units. McLellan (2015) found that the location of motorized routes relative to bear food sources was important and recommended that managers attempt to maintain or enhance high-energy foods while reducing human access into specific areas where and when those foods are abundant (seasonal habitat). When roads are located in important habitats such as riparian zones, snowchutes, and shrub fields, habitat loss through avoidance behavior can be significant. Mace et al. (1996) found that most of the roads within grizzly bear seasonal ranges were either closed to vehicles or used infrequently by humans. Some grizzly bears avoided areas with a high total road density even when the roads were closed to public travel. If human-related disturbances such as high levels of road use continue in preferred habitats for extended periods of time, grizzly bear use of the area may be significantly limited, particularly use by female grizzly bears and/or their dependent offspring. In the Swan Mountain study (Mace et al. 1996), female grizzly bear home range selection of unroaded cover types was greatest and as road densities increased, selection declined. Zager (1980) reported the underuse of areas near roads by females with cubs. Aune and Kasworm (1989) found that female cubs generally established their home range within or overlapping with their mother's home range, whereas males generally dispersed from their mother's home range. Long-term displacement from a portion of her home range may result in long-term under-use of that area by female grizzly bears. Because cubs may have limited potential to learn to use the area, learned avoidance behavior could persist for more than one generation of grizzly bears before grizzly bears again utilize habitat associated with closed roads. Thus, displacement from preferred habitats may significantly modify normal female grizzly bear behavioral patterns.

Conversely, grizzly bears can become habituated to human activity and show a high level of tolerance especially if the location and nature of human use are predictable and do not result in overtly negative impacts for grizzly bears (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. 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 (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.

Both Yonge (2001) and Mattson (1993) indicated that increases in human use levels can be deleterious if some human activities are unregulated, such as use of firearms, presence of attractants, nature and duration of human uses. Conversely, a level of coexistence between humans and grizzly bears can be achieved if such activities are controlled. Near Cooke City, Montana, the New World Mine reclamation project had minimal effects on grizzly bears, in part because reclamation activities were temporally and spatially predictable and people associated with the work were carefully regulated against carrying firearms or having attractants available to grizzly bears (Tyers, unpublished 2006). In the Swan Valley of Montana, raw location data from a small number of collared grizzly bears show nocturnal use of highly roaded habitat (C. Servheen, U.S. Fish and Wildlife Service, pers. comm. 2005). The Swan Valley data have not

been statistically analyzed and the study was not designed to determine the impact of roads on bears, sample size is very small, and perhaps most importantly, mortality rates for these grizzly bears are not yet known. However, these data indicate that some grizzly bears can apparently habituate to relatively high levels of human activity.

It appears that some bears have adapted to the types of habitat and relatively low levels of security near human developments as compared to more remote areas. In particular, Ruby (2014) found that bears that used areas near roads and human development did so when human use was low, such as at night, and that bears rested less in these areas than in areas away from roads and human development. Northrup et al. (2012) looked at various levels of road use (low, medium and high) and found that during the day bears avoided crossing roads of all use levels, however the higher the use level the more likely avoidance occurred. Low volume routes were crossed during both day and night hours. In fact, at night, bears selected to cross low traffic volume roads at greater frequency than random.

Specific causes or factors involved in the selection or preferences for certain home ranges by grizzly bears are not well understood. Mace and Manley (1993) found that grizzly bear home ranges in the South Fork Study area included remote areas in high elevations. South Fork Study grizzly bear habitat-use data, road density analyses of the South Fork Study area, previous studies and CEM analysis (U.S. Forest Service 1994, Mace et al. 1999) suggested that low-elevation habitats were not freely available to grizzly bears because of high road densities and associated human use in these areas. High road densities in low-elevation habitats may result in avoidance of or displacement from important spring seasonal habitat for some grizzly bears. High road densities in and of themselves do not result in mortality but a mortality risk may occur for those individuals that venture into and attempt to exploit resources contained in these low-elevation areas.

Male grizzly bears typically have larger home ranges than females, and males, subadults, and transient grizzly bears are more mobile and do not have the same energetic needs as adult females. Transient individuals are highly mobile and not restricted to finding food and shelter within a home range. Thus, while displacement from habitat along roads may affect behavioral patterns such as feeding or sheltering of all grizzly bears, we do not anticipate such effects would cause harm or significant impairment to these behavioral patterns of transient, subadult, or male grizzly bears. Where road densities are high enough to result in significant displacement effects, non-lethal impairment to behavioral patterns of adult female grizzly bears and/or their dependent offspring may occur. However, some adult females have proven that they are able to successfully reproduce and raise young in BMUs, subunits, or areas outside of the recovery zone that exceed research benchmarks for adverse effects to grizzly bears (Kasworm et al. 2022a, Costello and Roberts 2021).

Secure Core/secure habitat. Ideal grizzly bear habitat provides some areas isolated from high levels of human impact. Studies have shown that female grizzly bears selected for, and survived better in, areas with greater secure habitat (Proctor et al. 2019). Analysis in the South Fork Study area (Mace and Manley 1993, Mace et al. 1996) indicated the importance of unroaded habitat, especially for females with cubs. Mace and Manley (1993) reported adult females used habitat further than 0.5 mile from roads or trails more than expected; 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 (*Ibid*.). Based on grizzly bear habitat use data from the Yellowstone ecosystem, secure habitat and road densities outside of secure habitat were important predictors of grizzly bear survival (Schwartz et al. 2010).

The IGBC Taskforce (IGBC 1994, 1998) recognized the importance of secure areas to grizzly bears. The Taskforce defined "core areas" within the recovery zones as those areas with no motorized use of roads and trails (during the non-denning period) or high intensity, non-motorized use, 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 within the recovery zones. Core areas within recovery zones should be a minimum of 0.31 mile (about 500 meters) from any open road or motorized trail, with the size and connectivity of core area patches being established by recovery zone, depending on ecosystem-specific habitat conditions. Once established and effective, core areas should remain intact on the landscape for at least 10 years (*Ibid*.). In the South Fork Study area of the NCDE, approximately 68 percent of the adult female composite home range was core area (U.S. Forest Service in litt. 1994, K. Ake, U.S. Forest Service, pers. comm. 2005).

Habituation to Human Attractants. Continued exposure to human presence, activity, noise, and other elements can result in habituation, which is essentially the loss of a grizzly bear's natural wariness of humans. High route densities and associated increases in human access into grizzly bear habitat can lead to the habituation of grizzly bears to humans. Habituation in turn increases the potential for conflicts between people and grizzly bears. Habituated grizzly bears may obtain human food or garbage and become involved in nuisance bear incidents, and/or threaten human life or property. Such grizzly bears generally experience higher mortality rates as they may eventually be removed from the population through management actions. Habituated grizzly bears are also more vulnerable to illegal killing because of their increased exposure to people. In the Yellowstone region, humans killed habituated grizzly bears over three times as often as non-habituated grizzly bears (Mattson et al. 1992).

Subadult grizzly bears are more often vulnerable to habituation and illegal killing or they conflict with people and are removed through management action. Subadult grizzly bears frequently traverse long distances or unknown territory, increasing the likelihood of encountering roads, human residences or other developments where human food or other attractants are available, increasing the potential for habituation and/or conflicts with people. In the Yellowstone ecosystem, roads impacted individual age and sex classes of grizzly bears differently. Subadults and females with young were most often located near roads, perhaps displaced into roaded, marginal habitat by dominant grizzly bears (Mattson et al. 1987, Mattson et al. 1992).

While management actions of grizzly bears due to human food habituation do occur, such actions are infrequent to none on many areas of federally administered lands as a result of the many food storage orders that are in place. On Forest Service administered lands, grizzly bear mortalities more often resulted from mistaken identity during legal hunting season, illegal or malicious killing, or automobile and train collisions (K. Ake 2011 *in litt.*).

Grizzly Bear Mortality. While grizzly bear mortality may occur as a result of collisions with motorized vehicles, such mortality is more likely to occur on motorized routes where motorized

use occurs at high speed as opposed to Forest roads. Aside from grizzly bears killed by vehicle collision, the specific relationship between roads and the mortality risk to grizzly bears is difficult to quantify. The level of human use of roads is one of several factors influencing the mortality risk associated with any road. Research supports the premise that forest roads facilitate human access into grizzly bear habitat, which can directly or indirectly increase the risk of mortality to grizzly bears (Proctor et al. 2019, Mattson et al. 1992, McLellan and Shackleton 1988, Mace et al. 1987, Dood et al. 1986).

The presence of Forest roads alone does not necessarily result in direct mortality of grizzly bears, but the proximity of the roads to human population centers, resulting in high numbers of people using roads, 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. 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. Potential grizzly bear mortality near roads is typically the result of intentional (self-defense, defense of life, poaching, etc.) or unintentional (mistaken identity) mortality. Whether illegal or not, these type of mortalities are not part of the Forest's proposed action and are not the focus of this biological opinion. Thus, any effects are not exempted under this biological opinion. Similar to illegal access of motorized routes, effects to grizzly bears related to mortality are reasonably uncertain. It is unknown as to when and where such mortality may occur. As such, the Service and the Forest are not able to calculate the extent of effects to individual grizzly bears. However, while such mortality may occur at times, effects of these intentional and unintentional grizzly bear mortalities are likely low as evidenced by the grizzly bear population status, including an increasing number of grizzly bears, an expansion of the distribution of grizzly bears, and an estimated positive population trend.

General effects of Winter Motorized Use on Grizzly Bears

Available information regarding the effects of snowmobiles on grizzly bears is generally anecdotal, such as grizzly bear responses to various stimuli other than snowmobiles collected during research. Such reports typically lack information related to the timing of disturbance, type of den, winter conditions or other important factors necessary to assess the significance of disturbance to grizzly bears, if any. Some information collected on black bears or other ursids may have some relevance, but even the data on these species is incidental and largely theoretical.

In the fall of 2000, the science and resource management staff of the Biological Resources Management Division of the National Park Service and the Rocky Mountains Cooperative Ecosystem Studies Unit at the University of Montana organized an expert workshop to summarize the state-of-science on monitoring the effects of snowmobiles on wildlife in national parks and surrounding lands. Graves and Reams (2001) edited the output of this expert workshop for protocols to monitor snowmobile effects on wildlife. The group concluded that the evidence was inadequate to predict impacts on grizzly bears, but the *possible* effects were identified: den abandonment, loss of young, increased energetic costs while bears were in dens or displaced away from suitable habitat if outside dens, death, and learned displacement from suitable habitat resulting from exposure to disturbance (Graves and Reams 2001). Impacts to emergent bears were identified as a higher concern than impacts to denning bears.

Typical high-use snowmobile areas and potential den sites have a limited likelihood of substantive overlap. Grizzly bears generally den in either timbered habitat or very steep slopes, including the slopes of open basins. Most of the heavy snowmobile use occurs on trails, roads, or open basins and meadows. Although some snowmobile riders use steep open basins for "high marking", in which case the potential for direct overlap between denning habitat and steep open slopes favored for "high marking" by snowmobiles may occur. However, most denning habitat, except for "high-marking" areas, is less favorable for snowmobile use and as such the chance of adverse overlap between grizzly bear den sites and snowmobile traffic is reduced.

Snow is an excellent sound barrier (Blix and Lentfer 1992) and impacts to denning bears would likely be less in deep snow conditions than in shallow snow conditions. It is likely that hibernating bears exposed to meaningless noise, with no negative consequences to the bear, habituate to this type of disturbance (Knight and Gutzweiler 1995). Reynolds et al. (1986) found that some bears, on occasion, appear to respond to noise or disturbance near the den site by waking up and moving around the den. On rare occasions, bears may abandon a den due to some disturbance (Reynolds et al. 1976, Swenson et al. 1997). However, den abandonment attributed to snowmobiles has not been documented.

The noise and human activity related to snowmobile use would likely impact grizzly bears most during the early and late denning period, or when snow levels are low and the snowmobile activity is near the den site. However, the early and late denning periods are times when snow conditions are least conducive to snowmobile activity. If disturbance occurred early during the denning season, a bear would likely have other denning habitat available. Grizzly bears are unlikely to abandon their dens very late into the winter due to the high energetic and fitness costs of doing so (Linnell et al. 2000). Theoretically, as the costs of abandoning a den and re-locating to another den increase, grizzly bears should be expected to tolerate greater levels of activity without abandonment.

Disturbance from snowmobiles is likely most consequential shortly before or after den emergence of a female with cubs. Most emerging bears move immediately to a known, reliable spring food source, such as a big game winter range (Reinhart and Tyers 1999). Females with cubs have high energetic needs, and cubs have limited mobility for several weeks after leaving the den, therefore they remain in the den site area for several weeks after emergence from dens (Haroldson et al. 2002; Mace and Waller 1997). Researchers involved in the 2000 workshop assessing snowmobile impacts (Graves and Reams 2001) indicated higher concerns with emergent females with cubs as they are likely the most sensitive to disturbance (Haroldson et al. 2002). Disturbance levels that cause a female to prematurely leave the den in spring or move from the den area could impair the fitness of the female and safety of the cubs. If cubs attempt to follow their mother, they would likely experience decreased fitness and the family group may be pushed to less suitable habitat. A disturbance would have to be severe for a sow to abandon her cubs (Linnell et al. 2000). 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.

Changing snow conditions in spring may help reduce the probability grizzly bears being impacted by snowmobiles. At the time of emergence, snow conditions are changing rapidly. The same conditions that help lead to bear emergence (e.g., water infiltrating the den) (Schoen et al. 1987; Craighead and Craighead 1972) lead to poor quality snow for snowmobiling. At that

time, snow is melting at lower elevations, making access to higher elevations more difficult for snowmobilers. In general, female grizzly bears with cubs emerge later in the season, when these snow and melt conditions are even more prevalent. Individual circumstances of access and allowable seasons are important variables to analyzing effects of snowmobiles to grizzly bears.

Effects of Motorized Access in the Action Area (non-winter)

The action area occurs both inside and outside of the NCDE and CYE grizzly bear recovery zones, in areas where grizzly bears may be present. Tables 2 and 3 above display the existing OMRD, TMRD, and secure core for the subunits within the NCDE recovery zone and secure habitat for the GBAUs outside of the recovery zones, respectively, within the action area. In addition, BMU 22 in the CYE recovery zone has 32 percent OMRD, 33 percent TMRD, and 55 percent secure core.

The use of motorized wheeled vehicles off of existing designated roads and trails is not permitted on the Forest. The Forest's MVUM shows the routes that are designated open for motor vehicle use, what type or class of vehicles are allowed on each route, and seasons or times of the year the use is allowed. Users are responsible for ensuring they are on a route designated for the motor vehicle being used. The MVUM is updated annually and is available to the public in print and on the Forest's web site.

The existing access conditions were determined using the best available information. The metrics described here represent the existing access condition as reviewed, although the Service recognizes that improved information may be documented and mapping and calculation errors can occur. As the access database is updated, the improved information will better reflect the existing conditions related to motorized access. If the Forest finds that it has new information or has made a mapping or calculation error in describing the existing condition and corrects the metrics, the Service does not expect any additional effects to grizzly bears related to those corrections because no actual changes occurred on-the-ground. The intent of this analysis is to capture the existing motorized access conditions and the potential effects to grizzly bears, including potential ongoing effects that may not be represented in the metrics described above due to potential errors or unknown information. If however, changes in the metrics occur due to Forest actions on-the-ground, site-specific analyses would need to occur to determine the potential effects.

Portions of the action area have high levels of motorized access while other portions have low levels of motorized access or no motorized access at all. The existing motorized access conditions within the Monture, Mor-Dun, North Scapegoat, South Scapegoat, and Rattlesnake subunits in the NCDE recovery zone are not expected to result in ongoing significant effects to grizzly bears. As explained above, the existing motorized access conditions within BMU 22 in the CYE recovery zone and the Mission and Swan subunits in the NCDE recovery zone are likely resulting in some level of ongoing significant effects to grizzly bears. While the standards set for BMU 22 are met, the metric for TMRD is worse than the research benchmark for when adverse effects are expected. TMRD was set higher than the research benchmark in BMU 22 because the amount and pattern of private ownership precludes attaining 26 percent. The Mission subunit is less than 75 percent Forest ownership and the lower amounts of secure core within the subunit are a result of motorized access on non-Forest land. The Swan subunit is long and narrow and does not contain as much wilderness and/or roadless as other subunits on the

Forest. The portion of the action area outside of the recovery zones includes areas designated as NCDE zone 1, which includes the Ninemile DCA, and NCDE zone 2 as well as areas outside of these designations. Outside of the recovery zone, the estimated amount of secure habitat ranges from a low of 2 percent of Forest land in the Middle Blackfoot GBAU to a high of 76 percent of Forest land in both the Fish Creek and Upper Rock GBAUs. Of all 30 GBAUs delineated on the Forest, six have less than 10 percent secure habitat on Forest land, seven have between 11 and 20 percent secure habitat on Forest land, seven have between 21 and 30 percent secure habitat on Forest land, four have between 31 and 40 percent secure habitat on Forest land, one has between 41 and 50 percent secure habitat on Forest land, two have between 51 and 60 percent secure habitat on Forest land, and three have greater than 60 percent secure habitat on Forest land. It is likely that portions of most of the GBAUs have existing motorized access conditions that may be resulting in ongoing significant effects to grizzly bears if or when female grizzly bears are present.

BE

No criteria or requirements have been established for secure core in the BE recovery zone. Since the entire portion of the BE recovery zone that occurs on the Forest is within the Selway-Bitterroot Wilderness, and no motorized routes occur within this portion of the BE recovery zone, it will continue to function as secure core for the foreseeable future. Other land ownership parcels are located adjacent to this portion of the BE recovery zone, however these parcels have no record of motorized routes and the closest known motorized route is greater than two miles from the portion of the BE recovery zone on the Forest. Like other land ownerships, adjacent National Forests could build a motorized route adjacent to this portion of the recovery zone, but it is unlikely given the ruggedness of the topography and the associated costs. Since no motorized access occurs on the Forest's portion of the BE recovery zone, motorized access will not result in any effects in that portion of the action area.

CYE

As we are analyzing the effects of motorized access management in the CYE, specifically BMU 22, within this consultation on the continued implementation of the Forest Plan, the 2011 consultation on the access management direction for the portion of the Forest in the CYE recovery zone will be superseded with this 2023 biological opinion. While the direction is the same as consulted on in 2011, we are including the effects in this document in order to consolidate the amount of ongoing biological opinions and capture all effects of the Forest Plan direction in one consultation using the current best available information.

The Forest Plan standard for BMU 22 is to provide no more than 33 percent OMRD, no more than 35 percent TMRD, and at least 55 percent secure core. TMRD was set higher than the research benchmark because the amount and pattern of private ownership precludes attaining 26 percent. With continued implementation of the Forest Plan, these existing conditions in BMU 22 are expected to be maintained. The higher TMRD may result in some level of adverse effects associated with displacement of individual female grizzly bears that may be present in the BMU. Although motorized access conditions in BMU 22 could have adverse effects to female grizzly bears, such effects are unlikely at this time as BMU 22 supports few if any grizzly bears and is not known to be occupied by any female grizzly bears at this time. However, female grizzly bears may begin to use BMU 22 during the life of the Forest Plan and if and when they do, they

may be displaced from key habitats and under certain conditions they may be displaced to levels that impair their normal ability to readily find food resources needed to sustain fitness necessary for breeding and producing cubs, and/or find shelter.

Standards for secure core were set individually for each BMU in consideration of unique biological factors such as habitat quality, seasonal habitat needs, sightings of family groups, records of human caused mortality, and adjacency to BMUs having females with young, as well as other non-biological factors such as presence of highways, private land inholdings, and access to popular recreation areas. Secure core areas strive to contain the full range of seasonal habitats that are available in the BMU and are fixed in place for a minimum of 10 years. In CYE BMUs not meeting their specific standard, which recently was the case for BMU 22 (met the standards in 2022), projects affecting secure core must result in increased core post-project. Once route closures to create core areas are established and effective, these core areas should remain in place for at least 10 years. Therefore, except for emergencies or other unforeseen circumstances requiring independent section 7 consultation, newly created core area shall not be entered for at least 10 years after creation. Once the secure core standard is achieved and in place for 10 years, routine forest management may be proposed in a core area block. However, BMUs must remain at or above the core standard. Consequently, potential losses to existing core must be compensated with in-kind replacement concurrently or prior to incurring the losses. New core areas must subsequently be managed undisturbed for 10 years. Such changes would be subject to further section 7 consultation for the site-specific project.

Permanent route construction within the CYE recovery zone is limited by standards. Since BMU 22 has standards to meet for OMRD, TMRD, and secure core, in order to construct permanent routes in these areas, other roads would likely need to be decommissioned depending on location and other site-specific details.

Forest Plan direction allows the Forest to temporarily affect underlying core area (i.e., any core habitat that is affected by the subject road and its buffer) within a BMU once per 10-year time frame, and not to exceed 1 bear year, for the sole purpose of completing road decommissioning/stabilization activities on existing closed or barriered roads in core area habitat. Subsequent needs to re-enter individual core areas within a BMU more frequently than once per decade for the purposes of road decommissioning shall be handled on a case-by-case basis. The effects of additional entries would be analyzed pursuant to such project level consultation. Pending the outcome of each analysis, additional measures to minimize potential effects to grizzly bears may be required. Temporary administrative use shall not exceed 60 vehicle round trips per active bear year per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30). If the number of trips exceeds 60 trips per active bear year in the Cabinet-Yaak ecosystem, then that road would be considered "open" for analysis and reporting purposes. Likewise, if the number of trips exceeds the allowable ecosystem-specific seasonal (spring, summer, and fall) vehicle round trips per road, then that road would be considered "open" for analysis and reporting purposes.

Depending on the location, timing, and duration, the allowance of temporary changes in access conditions within the CYE recovery zone may result in some level of effects, including the potential for adverse effects to grizzly bears through increased displacement. Such effects would depend on the potential temporary effects to the access metrics. While temporary effects to

motorized access conditions may occur, the extent of area on the Forest that could be affected is limited due to the limitations of the Forest Plan direction in the CYE recovery zone. Any potential adverse effects may be ameliorated by high quality habitat that is available in a large undisturbed area in the center of the BMU (Cube Iron/Silcox proposed wilderness and roadless areas north to Benson and Lone Tree peaks).

NCDE

The existing motorized access conditions throughout the NCDE portion of the action area, including areas within and outside of the recovery zone, may result in some level of ongoing effects, including some adverse effects, which may continue during the life of the Forest Plan. Additional motorized access associated with site-specific project activities may add to these effects.

As we are analyzing the effects of motorized access management in the NCDE recovery zone, as well as NCDE zones 1 and 2, within this consultation on the continued implementation of the Forest Plan, the 2017 consultation on the NCDE grizzly bear amendments to incorporate habitat management direction for the portion of the Forest within the NCDE recovery zone and NCDE zones 1 and 2, will be superseded with this 2023 biological opinion. While the direction is the same as consulted on in 2017, we are including the effects in this document in order to consolidate the amount of ongoing biological opinions and capture all effects of the Forest Plan direction in one consultation using the current best available information.

Recovery Zone

In 2018, the Forest Plan was amended to incorporate habitat management direction for the NCDE recovery zone. Within this habitat management direction, many standards require meeting or being better than the 2011 baseline conditions. The general approach of the 2020 NCDE grizzly bear conservation strategy is to maintain the habitat conditions that existed during 2011 because this is the initial period when the NCDE grizzly bear population was determined to be stable to increasing (NCDE Subcommittee 2020). A key assumption is that the measured levels of selected conditions and management activity that existed in 2011 did not prevent the growth and expansion of the NCDE grizzly bear population and thus, those conditions and management actions could continue at the same levels (Ibid.). This is often referred to as the 2011 baseline conditions. The 2011 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 Service while the grizzly bear was listed as Threatened. The baseline can also be updated to reflect changes allowed under the application rules, such as those caused by ownership changes or improved data (Ibid.). The information presented in Table 2 above displays the updated 2011 motorized access conditions and incorporates any errors, incomplete data, or changes made via section 7 consultation.

The Forest Plan desired condition NCDE-DC-AR-01 states that secure core will be provided at levels that contribute to recovery of the NCDE grizzly bear population. Within the grizzly bear subunits within the NCDE recovery zone, standard NCDE-STD-AR-02 requires no net increase in the 2011 baseline conditions for OMRD and TMRD and no net decrease from the 2011 baseline in the amount of secure core on Forest lands during the non-denning season. Thus, over

the life of the Forest Plan, the levels of OMRD, TMRD, and secure core in all subunits will be maintained at the same (or better) level than the conditions as of December 31, 2011, at which time the NCDE grizzly bear population was stable to increasing. As mentioned, some exceptions do apply and minimal updates have occurred under specific rationale. Refer to the environmental baseline section above for further information on the 2011 baseline conditions, which includes any updates to these conditions as well as the rationale for the updates. As all updates fall under the exceptions, this standard is being met.

As mentioned previously, the research benchmarks of 19 percent OMRD of more than 1 mile per square mile, 19 percent TMRD of more than 2 mile per square mile, and less than 68 percent secure core are used to determine when adverse effects may occur within the subunits of the NCDE (also referred to as 19/19/68). Except for the Mission and Swan subunits, all other subunits meet or are better than the research benchmark for OMRD, TMRD, and secure core. Most subunits on the Forest have very low levels of OMRD and TMRD and a very high level of secure core. Due to land ownership patterns, shape, and other specific circumstances the Mission and Swan subunits provide substantially less secure core than the other five subunits within the NCDE recovery zone. The Mission subunit is unique in that it has less than 75 percent federal ownership and therefore historically had a rule set of "no net loss" of secure core on federal lands in the subunit. The existing motorized access conditions in the Swan and Mission subunits are likely resulting in some level of ongoing adverse effects to grizzly bears associated with the displacement of grizzly bears from seasonally important feeding sites.

In 2011, the Forest reinitiated consultation for the access management strategy for the Swan 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 (U.S. Fish and Wildlife Service 2011). The Forest had met these conditions in 2011. While the Swan Subunit has met the Final Access Management Strategy for the Swan Subunit, the metrics have changed since consultation. The changes are partly a result of projects improving the OMRD, TMRD, and secure core and partly a result of updating the baseline conditions. As allowed under the NCDE grizzly bear amendments, updates to the baseline conditions occurred when better information became available (such as improved mapping accuracy) and when the Forest acquired land. All of the updates are documented in the NCDE Biennial Reports and are allowable updates to the baseline. The current conditions (2021) are documented in Table 2 above. Rationale for changes in the metrics can be found in the 2021 monitoring report (Ake 2022). As all updates fall under the exceptions, the updated information does not violate the standard to maintain conditions as of December 2011 with allowable updates and the standard associated with the baseline motorized access conditions is being met. Since the final access management strategy for the Swan subunit would maintain OMRD and secure core conditions that are worse than the research benchmarks for the NCDE, high open road densities, along with lower amounts of secure core, would continue to occur within the subunit indefinitely. Therefore, the access management strategy for the Swan subunit would likely result in adverse effects to some individual grizzly bears that may attempt to live in the Swan subunit and the 2011 biological opinion and incidental take statement on the final access management strategy for the Swan subunit was issued. In addition, some level of temporary road construction was also considered in the 2011 biological opinion. The effects of temporary road construction were subsequently addressed in the consultation on the 2018 NCDE grizzly bear amendments (for which the biological opinion is also being superseded as described

above). The effects of temporary route construction are analyzed below. As the Forest has previously met the conditions under the final access management strategy for the Swan subunit and continued motorized access management for the Swan subunit will be managed under the continued implementation of the Forest Plan, including the NCDE grizzly bear amendments, we are analyzing the effects of motorized access in the Swan subunit within this consultation on the continued implementation of the Forest Plan. As such, the biological opinion on the effects of the final access management strategy for the Swan subunit (U.S. Fish and Wildlife Service 2011a) is no longer relevant and is superseded by this 2023 biological opinion on the continued implementation of the Forest Plan.

Forest Plan Standard NCDE-STD-AR-03 allows for temporary increases in OMRD and TMRD for projects, not to exceed a 5 percent temporary increase in OMRD and not to exceed a 3 percent temporary increase in TMRD, both calculated over a 10-year running average. NCDE-STD-AR-03 also allows temporary changes in secure core during project activities with a limit of 2 percent temporary decrease in secure core calculated over a 10-year running average. NCDE-STD-AR-04 specifies that temporary public motorized use of restricted roads is not authorized within secure core. Temporary road construction and/or use within the recovery zone would be managed via these standards and would be expected to meet these standards.

The Monture, North Scapegoat, South Scapegoat, and Rattlesnake Subunits all encompass significant amounts of designated Wilderness and will remain above the research benchmark of 19/19/68 even if the temporary effects to OMRD, TMRD and secure core occur under projects having temporary effects associated with NCDE-STD-AR-03. These subunits are likely to continue to support the survival and reproduction of female grizzly bears, with no adverse effects anticipated associated with the temporary changes allowed under NCDE-STD-AR-03.

The Mor-Dun subunit currently meets the research benchmark values for OMRD, TMRD, and secure core. TMRD and secure core would remain above the research benchmark of 19 percent and 68 percent, respectively, even with temporary effects associated with NCDE-STD-AR-03. However, OMRD may temporarily increase above the benchmark if increases allowed under standard NCDE-STD-AR-03 are invoked to allow for project activities in the Mor-Dun subunit, potentially resulting in some level of short-term adverse effects associated with displacement of grizzly bears in this subunit, which may result in the under-use of suitable habitat by individual female grizzly bears and/or their dependent offspring, which may disrupt normal breeding (or more specifically, cub rearing) or feeding patterns. The amount of disturbance would depend on site-specific actions and conditions.

Temporary effects for projects allowed under NCDE-STD-AR-03 within the Mission and Swan subunits could result in temporary increases in OMRD and/or TMRD and/or temporary decreases in secure core that further exceed (worse than) the benchmarks. Since some level of ongoing adverse effects are likely already occurring as a result of the existing, baseline motorized access conditions in these subunits, use of the temporary increases allowed under NCDE-STD-AR-03 may result in additional adverse effects to grizzly bears that may be using the action area. The short-term, temporary increases allowed under NCDE-STD-AR-03 may result in additional under-use of suitable habitat by individual female grizzly bears and/or their dependent offspring, which may disrupt normal breeding (or more specifically, cub rearing) or feeding patterns. The amount of displacement would vary, depending on site-specific conditions (i.e. whether the area is providing secure habitat or is adjacent to other roads) and actions (i.e.

duration of use and/or length of road segment). Given the more favorable habitat conditions on the rest of the Forest within the NCDE recovery zone along with much of the remainder of the NCDE recovery zone and the improved status of the NCDE grizzly bear population, it is unlikely that measurable negative effects to the overall NCDE population would occur as a result of NCDE-STD-AR-03.

Guidelines are also provided to minimize the potential effects of temporary project implementation within the recovery zone. Temporary project implementation within the recovery zone should not exceed 5 years (NCDE-GDL-AR-01). Further, guideline NCDE-GDL-AR-02 states that secure core should be restored to pre-project levels within one year of completion of a project. Although 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 displacement so that bears are not permanently displaced by human activities. While the Forest may deviate from guidelines with an approved exception, it is not known at this time what exceptions may be used. Thus, these guidelines, as written, will be used for the effects analysis. If these guidelines are not met for any given site-specific action, site-specific consultation may be necessary depending on the site-specific information and effects.

Forest Plan standard NCDE-STD-AR-01 allows administrative use of roads that are closed to public motorized use within the recovery zone, provided that doing so does not exceed either 6 trips (3 round trips) per week or 1 thirty-day unlimited use period during the non-denning season. Exceptions to this standard are allowed for emergency situations. Roads and trails closed to public motorized use remain available without limitations to Forest Service personnel for administrative purposes including wildfire suppression, search and rescue, medical emergencies, permit administration, data collection, noxious weed treatments, general management, and other activities. The effects of administrative use of roads on grizzly bears is likely similar to temporary roads in terms of disturbance and displacement described above and may either be insignificant or adverse depending on site-specific location and duration of use. 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 motorized public use in these areas will not last longer than 30 days during one non-denning season, and will only occur outside the spring and fall bear hunting seasons. Further, public motorized use would not be permitted within secure core. Thus, the amount and duration of disturbance associated with this use would be limited and would likely be insignificant.

Depending on the location, timing, and duration, the allowance of temporary changes in motorized access conditions within the NCDE recovery zone may result in some level of effects. These effects could be insignificant associated with low levels of disturbance or could include the potential for adverse effects to grizzly bears through increased displacement associated with longer-term use. Such effects would depend on the existing motorized access conditions of the project subunit and the potential temporary changes to the access metrics. While temporary effects to motorized access conditions may occur, the extent of area on the Forest that could be affected is limited due to the limitations of the Forest Plan direction in the NCDE recovery zone. Any potential adverse effects may be ameliorated by high quality habitat that is available within the subunits.

Outside of Recovery Zones

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. Recovery zones are areas adequate for managing and promoting the recovery and survival of grizzly bear populations (U.S. Fish and Wildlife Service 1993). Areas within the recovery zones are managed to provide and conserve grizzly bear habitat. Some areas outside the recovery zones have some level of management as described above (i.e. NCDE zones 1 and 2) but most areas outside the recovery zones are not managed for grizzly bears and do not have a need to track the same motorized access metrics as within the recovery zone. As such, the moving windows process is not used outside of the recovery zones and the information and knowledge associated with motorized access is not consistent with the information presented for the recovery zones. In order to analyze the effects of motorized access outside of the recovery zones, as described in the baseline section above, we have incorporated secure habitat into this analysis. Secure habitat has been identified as one of the key issues related to effects of motorized access on grizzly bears and is important to the survival and reproductive success of grizzly bears. As secure habitat is directly tied to and based on open and restricted motorized routes and provides a more accurate indication of the spatial mix of motorized routes and secure habitat, it more adequately represents the potential effects to grizzly bears related to motorized access than a simple linear route density.

The grizzly bear SSA (U.S. Fish and Wildlife Service 2022a) recommends that consideration be given to motorized access management to facilitate natural recolonization between the BE and other recovery zones. This is partially addressed by Forest Plan management direction for the Ninemile DCA (addressed further below) that establishes a desired condition to provide habitat that can be used by female bears and allow for movement of bears between ecosystems (NCDE-LNF Zone 1-DC-01). In the area that lies between the NCDE recovery zone and the Ninemile DCA, a desired condition encourages consolidation of Forest lands and conservation easements with willing landowners (NCDE-LNF Zone 1-DC-02).

Under NCDE-LNF Zone 1-STD-01, a net increase above the 2011 baseline density of roads (NCDE zone 1) and roads and trails (Ninemile DCA) open to public motorized use during the non-denning season would be precluded on Forest lands in NCDE zone 1, including the Ninemile DCA. Since the 2011 baseline associated with open linear route density must be maintained, in order to construct new permanent open roads in these areas (not related to the limited allowable circumstances described below), other open roads would likely need to be restricted and closed to the public. While open linear route density within NCDE zone 1 would be maintained, the standard does not apply to secure habitat and such a change could result in effects to secure habitat. Access management within these areas would be monitored and compared with the 2011 baseline motorized access conditions, as described in the NCDE grizzly bear conservation strategy. Several situations may not apply to maintaining the 2011 baseline and could result in a change to road density in NCDE zone 1 such as: acquiring or exchanging land; compliance with federal law; motorized use related to mining activities; grizzly bear-human conflicts, resource damage, or human safety concerns; emergency situations; and temporary roads for the development, construction, or staging of a project or event that has a finite lifespan. Effects associated with any of these situations would be evaluated in a site-specific analysis, as appropriate.

Currently, on the Forest in NCDE Zone 1 and outside the Ninemile DCA, about 325 miles of Forest Service roads are legally open to public motorized use on about 289 square miles of Forest land, for an existing open road density of about 1.1 miles per square mile (U.S. Forest Service 2022 *in litt.*). In 2011, the linear open road density for NCDE zone 1, outside of Ninemile DCA, was 1.3 miles per square mile, thus standard NCDE-LNF Zone 1-STD-01 is being met. Based on data presented by Boulanger and Stenhouse (2014), this existing density of roads open to public motorized use is expected to be compatible with bear occupancy and to support survival of females with dependent young sufficient for a stable to increasing population trend. The existing conditions are expected to remain the same (or be better) over the remaining life of the Forest Plan (U.S. Forest Service 2022). NCDE zone 1, excluding the Ninemile DCA, overlaps with six GBAUs including the Clearwater, Cottonwood, Gold, Middle Blackfoot, North Missoula, and Placid GBAUs. The percent of secure habitat on Forest land among these six GBAUs range from 2 percent to 68 percent. However, all but the North Missoula GBAU, which is 68 percent secure habitat, have less than 15 percent secure habitat and ongoing adverse effects associated with displacement of some individual female grizzly bears may occur during the life of the plan.

On the southwest corner of NCDE zone 1 is the Ninemile DCA. The Ninemile DCA is intended to provide habitat that can be used by female grizzly bears with cubs and allow for grizzly bear movement to the BE recovery zone. Within the Ninemile DCA, about 569 miles of Forest roads and 37 miles of Forest trails are legally open to public motorized use on about 400 square miles of Forest land, for an existing average motorized route density of 1.5 miles per square mile (U.S. Forest Service 2022 *in litt.*). Forest Plan standard NCDE-LNF Zone 1-STD-01 requires no net increase from the 2011 density of motorized routes (roads and trails) open to public motorized use during the non-denning season on Forest lands within the Ninemile DCA. In 2011, the linear open route density for the Ninemile DCA was 1.6 miles per square mile, thus standard NCDE-LNF Zone 1-STD-01 is being met. This existing motorized route density is expected to be generally compatible with occupancy by and survival of female grizzly bears, including those with dependent young (Boulanger and Stenhouse 2014). The environmental baseline and continued conditions with respect to motorized routes open to the public are expected to support habitat connectivity between the NCDE and the other recovery zones, which is the goal of the demographic connectivity area (NCDE Subcommittee 2020). With the standard in place, the existing conditions are expected to remain the same (or be better) over the remaining life of the Forest Plan. The Ninemile DCA overlaps with four GBAUs including the Keystone, Mill North, Ninemile, and Trout East GBAUs. The percent of secure habitat on Forest land among these four GBAUs range from 4 percent to 33 percent and ongoing adverse effects associated with displacement of some individual female grizzly bears may occur during the life of the plan.

The intent is for NCDE zone 1, including the Ninemile DCA, is to support continual occupancy by grizzly bears, although at a lower density than within the recovery zone. With the current motorized access conditions, along with the standard NCDE-LNF Zone 1-STD-01, continual occupancy by grizzly bears is expected, although with some low level of adverse effects likely occurring to some individual female grizzly bears.

Twenty GBAUs have been delineated in the area of the Forest outside of the recovery zones, NCDE zone 1, and Ninemile DCA. The percent of secure habitat on Forest land among these GBAUs ranges from 4 percent to 76 percent. Less than 10 percent of Forest land is within

secure habitat in two GBAUs, between 10 and 20 percent of Forest land is within secure habitat in four GBAUs, between 20 and 30 percent of Forest land is within secure habitat in six GBAUs, between 30 and 40 percent of Forest land is within secure habitat in three GBAUs, between 40 and 50 percent of Forest land is within secure habitat in one GBAU, between 50 and 60 percent of Forest land is within secure habitat in two GBAUs, no GBAUs have between 60 and 70 percent of Forest land within secure habitat, and over 70 percent of Forest land is within secure habitat in two GBAUs. Table 3 above displays secure habitat within the GBAUs outside of the recovery zones.

When looking at all 30 GBAUs (within and outside of NCDE zone 1 and Ninemile DCA), the majority of existing secure habitat on the Forest (73%) is located in existing Wilderness and Inventoried Roadless Areas (IRA), while the remaining 27% of secure habitat occurs in other Forest MAs that limit road development. For example, the North Missoula GBAU has a large proportion of secure habitat outside of wilderness and IRAs (41%), but in this case, much of the secure habitat occurs within the National Recreation Area (MA 28) where road building is unlikely. A cluster of three adjacent GBAUs located on the east side of the Forest (Clearwater, Middle Blackfoot and Placid, all located in NCDE Zone 1) have very low amounts of secure habitat on Forest lands but contain a significant amount of land owned by The Nature Conservancy. Lands purchased by The Nature Conservancy from Plum Creek Timber Company are gradually being transferred into the public domain, creating continuous areas of publicly owned land. Over time, it is reasonable to expect that these GBAUs will be recognized as providing a greater proportion of secure habitat than they do currently; however, this effects analysis does not rely on that information as it would be associated with a future federal action subject to future site-specific consultation as necessary.

The Miller GBAU, located at the north end of the Sapphire Range, provides secure habitat between the North Missoula GBAU (Rattlesnake Wilderness) and Lower Rock GBAU (Welcome Creek Wilderness). However, the Miller GBAU has a very low level of secure habitat (4%) that is composed of several smaller patches under 2,500 acres in size. The relatively small patches of secure habitat scattered throughout the Miller GBAU are not ideal for bear movements and could impede bear movements primarily between Middle Blackfoot and North Missoula, and Lower Rock and Upper Rock Creek GBAUs, potentially affecting the larger scale connectivity among the NCDE, Bitterroot, or Greater Yellowstone recovery zones.

In addition, MA 6 (Research Natural Areas) and MA 19 (winter range, no timber) limit road building, which reduces the potential for reductions of secure habitat for GBAUs where those MAs occur. Although the elk summer habitat (MA 26) and grizzly bear habitat MAs (MA20 and MA 20a) don't preclude road construction, they do limit or restrict roads.

An analysis of the availability of secure habitat on Forest land was completed to assess the ability to support grizzly bears that may occupy or move through areas of the Forest outside of the recovery zones. The Forest Plan does not have requirements to provide secure habitat outside of the recovery zones. As previously stated, in order to be conservative in favor of the grizzly bear when analyzing effects of motorized access, all existing, drivable routes are buffered when delineating secure habitat outside of the recovery zone, regardless of whether they are legally open or restricted to public travel and includes legally restricted routes that may not have a barrier such as a berm or gate restricting them (i.e. it is restricted or closed via MVUM and/or sign). It is generally assumed that bermed roads are not in drivable condition, but when there is

uncertainty of whether effective berms or barriers exist, roads were considered drivable and coded as such in the database. The purpose of making these assumptions is only for analyzing effects to grizzly bears and does not change the management direction on the Forest. These assumptions are appropriate and necessary so as to not miss any potential effects to grizzly bears and give the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). This methodology acknowledges both that the Forest does not have standards limiting administrative use of roads outside of the recovery zones and that available data are less complete in this portion of the Forest in terms of the types and locations of existing closure devices and the condition of the road prism beyond the barrier. It is important to note that although this approach may result in a lower estimate of the existing amount of secure habitat, it assures that the impacts of motorized route use are not underestimated as a whole.

In addition, since the Forest lacks inventory information and has no management authority over non-Forest lands, a 500 meter buffer was placed around Forest land in those areas where Forest land is adjacent to non-Forest land ownerships. Buffering Forest land 500 meters from non-Forest Service land ownerships is a conservative approach when considering effects to grizzly bears and will capture any unknown or undisclosed cumulative effects that may result from non-Forest actions on non-Forest land that occur adjacent to Forest lands. For example, actions on adjacent non-Forest land could affect secure habitat on adjacent Forest lands by having impacts within 500 meters of secure habitat. Accordingly, the Forest lands within 500 meters of lands not administered by the Forest may not provide secure habitat due to the potential effects associated with motorized access on adjacent non-federal lands. While it is possible that Forest land within 500 meters may provide secure habitat, information as to activity on non-Forest land is often unknown or not disclosed and the Forest lacks management authority over non-Forest lands. As such, the amount of secure habitat on Forest land adjacent to non-Forest land could change at any time without the Forest's knowledge or authority. Therefore, to be conservative when analyzing effects to grizzly bears, in order to not miss any potential effects associated with motorized access on non-Forest lands, Forest land within 500 meters of non-Forest land is buffered out of the secure habitat metric for the Forest. Because of the long life of the Forest Plan, it is not possible to know everything that may occur on non-Forest land and because the Forest has no control on non-Forest lands, this buffer accounts for any cumulative effects to grizzly bears that may have occurred from actions on non-Forest lands. In other words, any potential unknown effects associated with non-Forest lands have already been incorporated into this analysis ahead of time. For example, if motorized access were to increase on non-Forest land adjacent to Forest land, potentially affecting grizzly bears in the action area associated with disturbance and/or displacement, the effects of such are already considered into the metrics of secure habitat that are measured for Forest lands. Thus, we would not miss any effects to secure habitat on Forest lands over time, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). Using this conservative approach does not result in significant effects to the grizzly bear population.

Accordingly, the secure habitat amounts provided are useful as a broad index of what may be available to grizzly bears that may use the action area outside of the recovery zone and a metric to track over time. The Forest is expected to update the secure habitat metrics for Forest land as they update their access data during site-specific project planning in order to more accurately portray what was existing on the ground at the time of this consultation. Routes that were existing on the Forest but unmapped due to errors or lack of information may or may not affect the Forest's estimate of the existing amount of secure habitat, depending on the location of the

roads. It is expected that this type of adjustment to the baseline would reflect better data and mapping rather than representing actual changes on the ground. As the access database is updated, the improved information will better reflect the existing conditions related to secure habitat in the GBAUs.

Given the lack of Forest Plan direction requiring specific levels of secure habitat in the areas outside of the recovery zones, it is possible that projects may permanently reduce secure habitat or more likely, temporarily reduce the effectiveness of the existing secure habitat. However, reductions and/or effects to secure habitat will be limited in most GBAUs by Forest Plan MA allocations that limit or preclude road construction. Given the variation in individual projects, the potential effects of permanent and temporary route construction and use on secure habitat depend entirely on the location of the new route and the existing secure habitat polygons. For example, permanent and/or temporary routes could be constructed completely outside of secure habitat and outside of the 500 meter buffer in close proximity to existing routes and would have no effect on secure habitat. Other circumstances may include temporary or permanent route construction and use within 500 meters of secure habitat but not directly within secure habitat, affecting the edge of secure habitat. Finally, sometimes temporary or permanent roads are built directly within secure habitat; thus affecting or potentially splitting a secure habitat polygon. Depending on the circumstances of the new roads as described above, the new roads may or may not affect secure habitat and potential effects to grizzly bears would range from insignificant to adverse.

While not specifically proposed under the Forest Plan, permanent route construction and use in the area outside of the recovery zones may occur, typically associated with a site-specific project. Permanent motorized route construction within NCDE zone 1 and the Ninemile DCA is limited by standards. Under NCDE-LNF Zone 1-STD-01, a net increase above the 2011 baseline density of roads (NCDE zone 1) and roads and trails (Ninemile DCA) open to public motorized use during the non-denning season would be precluded on Forest lands in NCDE zone 1, which includes the Ninemile DCA. However, while open linear route density within NCDE zone 1 would be maintained, permanent motorized routes that are restricted from the public could be constructed and have the potential to affect secure habitat or open motorized routes could be decommissioned and new permanent motorized routes could be constructed within secure habitat, thus reducing secure habitat but maintaining the linear motorized route density.

Permanent routes may be used during the short-term for a project and then restricted with a barrier with the potential for future administrative use or may be used for the long-term and receive a substantive amount of use if kept in an open status. Upon analyzing several large projects on the Forest, the Forest expects that some future projects will have at least a small permanent increase in roads, which may affect a small amount of secure habitat depending on site-specific decisions and information. As nothing is specifically proposed, for the purposes of this consultation, the information provided by the Forest was used and the effects of a very small permanent decrease of 1 percent of the secure habitat within any given GBAU outside of the recovery zones associated with the construction and use of permanent motorized routes will be analyzed. For future site-specific projects with permanent route construction that may affect more than 1 percent of a given GBAU, which is allowed but difficult to analyze programmatically, the effects of such will be analyzed during the site-specific project consultation as they would not fall under the level of effects analyzed here.

Vegetation or other management actions often require the construction and use of temporary routes or temporary use of restricted routes for motorized access. While not specifically proposed under the Forest Plan, temporary route construction and use, and temporary use of restricted routes may occur on a project by project basis. Temporary routes built for resource extraction such as timber harvest or mining may be short-term in duration of use or may remain on the landscape for several years and receive a substantive amount of use. To aid in estimating the amount of secure habitat that may be affected in the future, the Forest evaluated the effects to secure habitat from 4 recently planned projects that occur within 6 GBAUs (Table 15 in the biological assessment). Sawmill Petty and A-BLT previously calculated and analyzed the effects to secure habitat by GBAU. The Westside Bypass Wildfire Resiliency and Redd Bull previously calculated and analyzed secure habitat by analysis area (GBAUs were not delineated at that time) and were adjusted here to present the data by GBAU. The effects to secure habitat resulting from these recent projects ranged from 92 acres to 871 acres in a GBAU, with the percent of secure habitat affected ranging from nearly 1 percent to 5.5 percent in the short term. Over the longer term, after project completion, the amount of secure habitat affected by these projects will return to pre-project levels.

Using this information, and for the purposes of this consultation, the Forest estimated that the construction and use of temporary project routes or temporary use of restricted routes would temporarily decrease the effectiveness of secure habitat by no more than 5 percent in any given GBAU at any given period of time. Like the Sawmill Petty Project, projects may span more than one GBAU and for those projects, a project would not affect secure habitat by more than 5 percent in each of the GBAUs.

Depending on the site-specific project information (size, location, duration, etc.), effects associated with permanent and/or temporary route construction and use, or temporary use of restricted routes could range from minor disturbance and insignificant effects to displacement of grizzly bears that may result in adverse effects to individual female grizzly bears. The effects of displacement and under-use of habitat related to motorized access (including the existing motorized access conditions, the potential permanent and/or temporary route construction and use, and temporary use of restricted routes) are tempered by local resource availability, resource condition, seasonal use, and the number of grizzly bears using an area. Currently, the number of grizzly bears using the Forest varies, with use ranging from higher use in the NCDE recovery zone and NCDE zone 1 to very low or none in BMU 22 of the CYE recovery zone and portions of other areas outside of the recovery zones and NCDE zone 1. Depending on site-specific information on the presence of grizzly bears and location of secure habitat within the GBAUs, adverse effects from existing low amounts of secure habitat in some portions of the action area, permanent decreases in secure habitat, or temporary effects to secure habitat may result in the displacement of individual grizzly bears, the avoidance of suitable habitat, and/or the reduction of habitat to an unsuitable condition; potentially significantly affecting individual female grizzly bears and/or their dependent offspring. Under-use of habitat in proximity to roads by grizzly bears does not necessarily preclude use or form a barrier to dispersal and movement across the landscape.

At this time, within some portions of the GBAUs in the action area (the Forest), grizzly bears have not been verified. In addition, in some areas where transient males have been verified, no female grizzly bears have been verified. While we do not expect effects at this time for these scenarios, the existing, baseline motorized access conditions may result in some level of ongoing

adverse effects to individual female grizzly bears and/or their dependent offspring if and when they occur in these areas at some point in the future. Numbers of grizzly bears in areas further away from grizzly bear populations are expected to increase slowly over time. This is especially true for female grizzly bears. As mentioned earlier, Proctor et al. (2012) found males move more frequently and over longer distances than females. Males have large home ranges and establish home ranges nearly three times further away from their mother's home ranges than do female offspring. Females usually establish smaller home ranges than males that overlap with their mother's home range (Waser and Jones 1983; Schwartz et al. 2003). In doing so, they generally disperse over much shorter distances than male grizzly bears (McLellan and Hovey 2001; Proctor et al. 2004). Therefore, female dispersal is a multi-generational process where females must live year-round in an area, successfully reproduce, and their independent offspring disperse into adjacent, unoccupied habitat. Thus, female grizzly bear presence in some portions of the action area is likely to increase slowly, if and when population pressure grows. The earliest detections of grizzly bears from the NCDE found in the intervening area between the NCDE and the YBGE were male, and males make up most of the known occurrences in this region (Mace and Roberts 2012). Multiple confirmed individuals have occurred in the area immediately surrounding the BE recovery zone since 2007; all of the known sex but one were male (U.S. Fish and Wildlife Service 2022a, J. Fortin-Noreus, U.S. Fish and Wildlife Service, pers. comm. 2023). While multiple verified sightings of unknown sex also occurred from 2017 to 2020, only one female grizzly bear has been documented in the BE (Ibid.). That female was a subadult from the NCDE found in the Bitterroot Valley (within 5 km of the recovery zone boundary). The bears was pre-emptively relocated to near the Welcome Creek Wilderness to avoid conflict. After the relocation the bear journeyed back north of I-90 to den (Ibid.). Until numbers substantially increase, grizzly bears now occupying or moving into these areas in the near future would not likely face significant competition for habitat and resources from other grizzly bears and displacement from quality habitat is not as likely to result in adverse effects to individuals as they are likely to have options to move to other areas to find resources.

Male grizzly bears have larger home ranges than females, and males and subadults are independent, more mobile and do not have the same energetic needs as adult females. While displacement may affect behavioral patterns of males and subadults, such as feeding or sheltering, we do not anticipate such effects to be significant to subadult or male grizzly bears. Displacement from quality habitat has more significant impacts on adult female grizzly bears than males or subadults because adult females have higher energetic needs to sustain fitness prior to and during gestation and lactation and when rearing. As such, adult females can less afford the additional energy expended to find high quality foods and shelter if displaced, especially during the early spring or late summer to fall hyperphagia season. During some years, due to poor climatic conditions and resulting food scarcity and/or high levels of forest management activity or recreational activity, displacement effects from areas with high road densities could be more frequent and intense.

Depending on the site specific information regarding the existing motorized access conditions, permanent route construction and use, temporary route construction and use, and temporary use of restricted routes, the Service anticipates that some level of adverse effects to female grizzly bears and/or their dependent offspring with home ranges impacted by such routes may occur in some situations during the life of the Forest Plan. Some adult females may be displaced from key habitats and under certain conditions they may be displaced to levels that impair their normal ability to readily find food resources needed to sustain fitness necessary for breeding and

producing cubs, and find shelter. We do not expect that all existing routes, new permanent and/or temporary routes and use, or temporary use of restricted routes would have adverse impacts on female grizzly bears and/or their dependent offspring, or that all female grizzly bears and/or their dependent offspring would be adversely affected by these conditions. Some adult females have proven that they are able to successfully reproduce and raise young in BMUs or subunits that are worse than the research benchmarks (Kasworm et al. 2022a, Costello and Roberts 2021). The level of effects would depend on such things as grizzly bear use in the action area, location of the road, length of the road, timing of use, the frequency and intensity of use, and the duration the road would be on the landscape, in relation to those factors listed above for effects of roads. Not all temporary routes would likely to be constructed at once. Some of the routes would be consolidated in project areas and be constructed and used at the same time, which would concentrate effects on grizzly bears into a smaller area. Other roads would be separated by space and time across the Forest, which may affect more individual grizzly bears, but have less intense effects. However, if under-use of key feeding and sheltering habitat by female grizzly bears is significant, they may fail to obtain the necessary resources to breed, successfully reproduce, and/or successfully raise dependent offspring.

For the GBAUs lacking grizzly bear use, especially female grizzly bear use, we do not expect adverse effects associated with motorized access at this time. Until such time that female grizzly bears begin to use these GBAUs, the existing motorized access conditions are not likely resulting in adverse effects to grizzly bears. We conservatively include the potential for adverse effects in these areas due to the long time-frame that the Forest Plan will be effective, during which some females may begin to use these GBAUs and experience adverse effects from the ongoing motorized access conditions and low amounts of secure habitat and/or temporary roads or temporary use of restricted roads.

In sum, ongoing effects from existing motorized access conditions and new effects from permanent route construction and use, temporary route construction and use, and/or the temporary use of restricted routes may affect grizzly bears. These affects may be insignificant in some situations or adverse in others. Adverse effects may significantly impact an adult female grizzly bears' ability to find food resources, breed and raise young, and find adequate shelter at some time over the life of the Forest Plan. Not all actions related to access under the Forest Plan will result in adverse effects. We anticipate that the ongoing adverse effects from existing motorized access conditions and new effects from permanent and/or temporary route construction and use, and temporary use of restricted routes would affect only few adult females and/or their dependent offspring over the life of the Forest Plan. Further, we do not expect that all adult females and/or their dependent offspring that are exposed to disturbances related to motorized access conditions and low amounts of secure habitat would suffer significant displacement effects, nor would the effects persist throughout an individual female's life span as some females are able to adapt and have proven that they are able to successfully reproduce and raise young in areas with high route densities and associated low amounts of secure habitat. We expect that effects would vary substantially depending upon the wariness of the individual bear, the size of and habitat quality within her home range, the number of other grizzly bears using the particular area, climate conditions, annual food resources, and the nature, intensity and duration of human activity during any particular year. All of these are factors that may affect options available to adult females if displaced. Further, conditions the following year may be considerably different.

Winter Motorized Use

The primary concerns with winter over-snow vehicle use (snowmobile) with respect to grizzly bears are the potential effects associated with denning, den emergence, and spring habitat. Summer and fall habitats are not at issue since over-snow vehicle use would not overlap with these seasons. Winter recreation primarily occurs during the grizzly bear denning season. Information on winter motorized over-snow travel on the Forest is displayed in the baseline section above and will not change as a result of this consultation on continued implementation of the Forest Plan. Thus, the amount and timing of winter motorized use would remain the same under the Forest Plan as the existing, baseline condition.

The grizzly bear SSA stated that there is no evidence to indicate that current levels of recreation are limiting grizzly bear populations (U.S. Fish and Wildlife Service 2022a). Although sample sizes are small, there is no evidence from research to date that indicates existing winter motorized activities have adverse effects on denning grizzly bears. To be conservative for the grizzly bear, we cautiously anticipate some level of adverse effects associated with the overlap of over-snow vehicle use with the den emergence of female grizzly bears with offspring.

As stated above, the OSVUM displays about 550 miles of over-snow vehicle routes on the Forest. About half of the over-snow vehicle routes occur on the Seeley Lake Ranger District and the majority of the remaining half of the over-snow vehicle use routes occur on the Missoula and Superior Ranger Districts. Cross-country travel with over-snow vehicles is allowed on about 66 percent of the Forest, either all winter or seasonally.

The remaining 34 percent of the Forest does not authorize over-snow vehicle use which includes wilderness and other sensitive areas. About 52 percent of the BE, CYE, and NCDE recovery zones and 16 percent of the NCDE zone 1/Ninemile DCA are closed year-round to all over the snow vehicles. A small percentage (<1 percent) within the recovery zone and NCDE zone 1/Ninemile DCA have seasonal restrictions for over snow vehicle use. About 34 percent of the portion of the Forest outside the recovery zones and NCDE zone 1/Ninemile DCA has year-round over-snow vehicle closures while about 3 percent of this area has seasonal over-snow vehicle closures. The baseline section above described in more detail the existing and ongoing conditions associated with over-snow vehicle use.

Despite the Forest covering a large area of grizzly bear habitat, the only known denning habitat occurs within the NCDE. Grizzly bear denning has not been recorded in the portion of the BE or CYE portions of the Forest. Grizzly bears do den in the CYE to the north of the Forest but not currently within the portion located on the Forest (BMU 22). As the bear population continues to grow and expand, grizzly bears could den within areas not previously known to have active grizzly bear denning. Grizzly bears are quite variable in their selection of denning habitat and structures (Schwartz et al. 2003). Grizzly bears usually dig dens on steep slopes where wind and topography cause an accumulation of deep snow and where the snow is unlikely to melt during warm periods. In addition, grizzly bears are more likely to den in areas with greater canopy cover and at elevations above 6,371 feet (>1,942 meters) (Mace and Waller 1997).

Late season over-snow vehicle use is not restricted in all portions of the action area and in some portions of the action area winter motorized use would extend beyond the April 1 grizzly bear spring emergence period. In the NCDE recovery zone within modeled grizzly bear denning habitat, Forest Plan standard NCDE-STD-AR-08 allows no net increase in the percentage of area or miles of routes designated for motorized over-snow vehicle use on Forest lands during the den emergence time period. Outside of the NCDE recovery zone, the Forest Plan does not restrict motorized over-snow vehicle use during the den emergence period outside the areas with year-round closure as shown on the OSVUM.

Over-snow vehicle use can occur on the Forest from December 1 to March 15, March 31, April 15 or April 30 depending on the location. In addition, some areas on the Forest do not have a closed season. As such, the Forest does have some areas where over-snow vehicle use may occur during the den emergence period. The Forest estimated the acres of overlap between denning habitat and over-snow vehicle use (U.S. Forest Service 2022).

For those areas where winter motorized use does not occur beyond March 31, effects would be insignificant. The effects of winter motorized use beyond March 31 in those areas that overlap denning habitat are discussed below in the denning habitat, den emergence, and spring habitat sections.

Denning Habitat

As discussed in the 'general effects of snowmobiles on grizzly bears' section above, the potential for disturbance to denning grizzly bears does exist but is probably low due to the low probability of a direct encounter of a snowmobile to a den and even in that unlikely case, the excellent insulative properties of snow to mitigate the noise. It is more likely that impacts to denning grizzly bears, if they were to occur, would occur upon den emergence as discussed below. Therefore, although some grizzly bears may be affected during the denning season, the Service believes that the magnitude of impacts during this time would not reach levels that would injure grizzly bears, or be expected to appreciably reduce the reproduction, numbers or distribution of grizzly bears.

Den Emergence

To review, female grizzly bears begin emerging from their dens about April 1, with males typically beginning to emerge about 2 weeks earlier (Mace and Waller 1997). Grizzly bears typically spend a few days to a few weeks at or near the den before moving to other locations to begin feeding. During this time the grizzly bears have been observed to be lethargic and approachable. After leaving the den site grizzly bears usually move to lower elevation habitats such as riparian areas and avalanche chutes for much of their foraging during spring (Ibid.). Based on the behavior of grizzly bears in response to motorized use of roads in Mace and Waller's (1997) study, snowmobile activity after den emergence dates could disturb and/or displace grizzly bears. The greatest probability of interactions at or near dens would obviously be expected where modeled denning habitat overlaps with open snowmobile areas and the influence zones around roads or routes. As discussed in more detail below (under *spring habitat*), once grizzly bears move away from den sites and toward spring habitats, there will be very little potential for conflict with snowmobiles.

Snow conditions within portions of the action area are often suitable for over-snow vehicle use well beyond April 1, the date grizzly bears generally begin emerging from their dens. This is

true especially in the higher elevations within the recovery zone. However, under the existing Forest Plan, areas with extended winter motorized use seasons (after April 1) do occur. Therefore, the potential exists for interactions between snowmobiles and grizzly bears that have recently emerged from their dens.

As previously mentioned, about 29 miles are open to over-snow vehicle use during the den emergence period (about 24 miles within the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA and 5 miles outside of this area). No trails for over-snow vehicle use are identified in the OSVUM for the CYE and no over-snow vehicle use trails or roads are used within the BE. About 205,100 acres of denning habitat are open to cross-country over-snow vehicle use during the den emergence period. About 58,200 acres occur within the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA, about 22,800 acres occur within the CYE Recovery Zone in BMU 22, and about 124,100 acres occur within areas outside the NCDE, CYE, and BE recovery zones, NCDE zone 1, and the Ninemile DCA. The portion of the BE Recovery Zone on the Forest is entirely within an area closed to over-snow vehicle use, thus no acres of over-snow vehicle use overlaps potential denning habitat. While these acres are open during the den emergence period, from a qualitative review, not all of these acres of cross-country over-snow vehicle use are available for such due to either the ruggedness of the terrain or logistical limitations (e.g., fuel). In addition, some areas may not be available to over-snow vehicle use after March 31st due to a lack of snow, particularly on the Plains/Thompson Falls Ranger District where it is largely drier and lower elevation. Finally, not all of these acres are currently supporting denning grizzly bears but the potential for grizzly bears to den in these areas over the life of the Forest Plan does exist.

Disturbance from over-snow vehicle use is likely most consequential shortly before or after den emergence, particularly to females with offspring. Females with cubs have high energetic needs in the spring, and cubs have limited ability to travel for several weeks after emergence from the den. Disturbance levels that cause a female to prematurely leave the den in spring or move from the den area could impair the fitness of the female and safety of the cubs. If cubs attempt to follow their mother, they may experience some level of decreased fitness and the family group may be pushed to less suitable habitat. Thus, significant disturbance during this time may reach levels that would injure grizzly bears, specifically adult females and/or their dependent offspring. Based on naturally earlier den emergence of male bears and females without young and their independence and mobility, the Service does not anticipate the effects of disturbance caused by over-snow vehicle use to be adverse to male grizzly bears or female grizzly bears without offspsring.

Spring Habitat

Upon emergence from their dens in the spring, grizzly bears typically move to lower elevations where their dietary needs may be met. Typical spring food sources include early greening herbaceous vegetation in low elevations, riparian areas, and in melted-out avalanche chutes. Grizzly bears also feed on dead ungulates from winter kill on winter ranges and in some locations grizzly bears prey on elk calves (usually available after June 1).

The potential for disturbance or displacement of grizzly bears from spring feeding habitat in the action area is influenced by the variability in snowpack and the rate of spring melt. Although over-snow vehicle use would be permitted after March 31 in some areas, spring over-snow vehicle use areas and spring grizzly bear habitat are almost mutually exclusive in that the areas

that would be suitable for spring over-snow vehicle use (i.e. more snowpack) would not typically overlap with spring grizzly bear habitats (i.e. less snowpack). Therefore, the Service does not expect impacts to spring habitat and foraging grizzly bears related to winter motorized use to be significant.

Aircraft use

The use of aircraft, including helicopters, has occurred and is likely to continue to occur on the Forest associated with several activities. Helicopters can be used for tree harvest; however this activity has been decreasing on the Forest. Aircraft is also used for prescribed burning, aerial herbicide application, reconnaissance, and emergency actions such as during wildland fire suppression. The duration of use of aircraft that produces noise during project implementation may be as little as a day to several days to weeks or months or more in an area.

The NCDE grizzly bear conservation strategy (NCDE Subcommittee 2020) and guidance to the effects of helicopters on grizzly bears (Montana/Northern Idaho Level 1 Terrestrial Biologists Team 2009) identify the potential for disturbance by recurring low-elevation (<500m) helicopter flights. These documents also identify and provide management guidance for several factors that influence grizzly bears including potential disturbance and displacement from habitat. Low flying aircraft can also disturb bears, especially when the flights are recurring. The use of low flying aircraft would likely be limited to basic reconnaissance, wildland fire suppression, prescribed burning, herbicide treatment, and tree harvest. However, not including flight take-off and landing, it would be rare for reconnaissance flights to fly below 500 meters above the ground. The majority of the anticipated recurring flights below 500 meters may include a portion of the flights during wildland fire suppression, but more commonly would be during the use of a helicopter for prescribed burning, herbicide treatment, and/or tree harvest. During the use of aircraft equipment, people may be present on-the-ground, adding to the level of disturbance. The disturbance associated with equipment noise and/or human presence may result in any grizzly bears present in the area to move away, at least a short distance, while the work is on-going. With the exception of recurring long-term aircraft use, grizzly bears would likely return soon after the work has been completed and disturbance has stopped. Any potential for project-specific effects associated with aircraft use will be analyzed during site-specific consultation.

Non-motorized recreation

Non-motorized activities such as mountain biking, horseback riding, and hiking will occur throughout the action area. Dispersed recreation including the use of non-motorized trails may cause disturbance of grizzly bears to varying degrees. However, grizzly bear mortality related to non-motorized recreation is rare and population-level impacts have not been documented (Jope 1985, Kasworm and Manley 1990, Mace and Waller 1996, White et al. 1999).

In most situations, impacts associated with non-motorized use would likely be short-term and would range from no response from a grizzly bear to a grizzly bear temporary fleeing the area. Grizzly bears may adapt to consistent, predictable activity and may notice the activity but not flee from it (Jope 1985, Mattson 2019). This reaction is more likely to occur on trails with regular use. On non-motorized trails that receive low amounts of human use, human activity

may result in a grizzly bear temporarily fleeing from the disturbance, expending extra amounts of energy (McClellan and Shackleton 1989, Mattson 2019).

Non-motorized trail uses (hiking, horseback riding, mountain biking) inherently have some risk of facilitating grizzly bear-human conflicts via sudden surprise encounters, depending on whether the bear flees or charges. Interactions with recreationists may disrupt bear's access to important food resources such as insect aggregation sites and huckleberry fields. However, except in the rare cases where a human-bear encounter leads to bear mortality, it is unlikely that the impacts of dispersed recreation would rise to the level of an adverse effect. In Alberta, Canada, Herrero and Higgins (2003) found small parties of 1 to 3 people were injured by grizzly bears more often than larger groups, with attacks by bears on humans occurring disproportionately more frequently in national parks. Most attacks by grizzly bears involved sudden encounters at close range where the bear is attacking defensively rather than predatory (Ibid.). Human activities that were occurring prior to the bear attacks mostly included hiking, hunting, and working, with hiking being the most common activity. Due to varying skill levels and speed of travel of mountain bikers, they are less likely to travel in close groups and maintain verbal contact with other riders, resulting in minimizing the amount of noise and reducing the potential for early detection and avoidance by grizzly bears. Thus, mountain biking may elicit greater flight response from grizzly bears than other non-motorized use due to the higher potential for sudden encounters (Quinn and Chernoff 2010, Mattson 2019, Servheen et al. 2017).

Often, grizzly bears disturbed by non-motorized use will exhibit increased nocturnal activity and decreased daytime activity when non-motorized use is most likely to occur (Mattson 2019). While grizzly bears may experience varying degrees of disturbance effects as a result of non-motorized recreation, due to the amount of human use and the type of activities on the Forest along with the lack of documented conflicts related to such, we expect effects will be insignificant as grizzly bears will likely adapt to such use or change its use patterns. Grizzly bears are habitat generalists and would be able to shift their use to low disturbance areas within their home ranges during activity. Such impacts are not likely to significantly affect an individual grizzly bear's ability to breed or find food or shelter.

We do not anticipate adverse impacts to grizzly bears as a result of the Forest Plan for non-motorized use during the winter. Due to the nature of activity, timing (grizzly bears are denning), duration, etc. we expect any disturbance effects to be minimal, if any effects occur at all. Even during the den emergence period, disturbance associated with non-motorized activity is not expected to reach a level that would displace grizzly bears and result in adverse effects, as described in the paragraph above.

Food and Attractant Storage and Site Development

This section focuses on analysis and discussion of the direct and indirect effects to grizzly bears related to food and attractant storage issues and site development. Also refer to the '*Habituation to Human Attractants*' subsection in the '*General Effects of Roads on Grizzly Bears'* section for further discussion on habituation.

General Effects of Food and Attractant Storage and Habituation

Improperly stored food, garbage, and/or 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 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.

Incidence of property damage or conflicts associated with human-related foods is inversely proportional to the availability of high quality grizzly bear foods found in the wild; during periods of poor natural food production incidences of human-grizzly bear conflicts typically increase. When poor seasonal bear foods exist in part of or through the entire non-denning season in the GYE and NCDE, the incidences of bears causing property damage and obtaining anthropogenic foods increased significantly over average or good years (Gunther et al. 2004, Manley 2005). The conflict relationship is magnified when the availability of late season natural foods such as whitebark pine seeds is insufficient to meet the high energy requirements during hyperphagia (Mattson et al. 1992).

Numerous studies in the NCDE elucidate the importance of late-season frugivory by grizzly bears, especially selection for globe huckleberries (*Vaccinium globulare*; Martinka and Kendall 1986, Weaver et al. 1990). Berry failure due to drought or destruction of plants by fire would force grizzly bears to range more widely than in normal periods of seasonal availability (Blanchard and Knight 1991). Therefore, grizzly bears face an increased risk of encounters with humans and ultimately human-caused mortality during the autumn season. Grizzly bears in some areas that avoided trails with human activity during part of the year changed this avoidance behavior when a favored berry resource came into season (Donelon 2004). Although grizzly bears still had a low tolerance for trails with high human activity, the tendency to approach areas of human activity when nutritional and energy needs are high could put individual bears at an increased risk of immediate conflict or condition them to the presence of people, which could lead to conflicts later in time.

Effects of Habituation and Developed Sites in the Action Area

Developed recreation sites are sites or facilities with features that are intended to accommodate public use and recreation, such as campgrounds, rental cabins, summer homes, trailheads, lodges, ski areas, fire lookouts, visitor centers, and others. In addition to disturbance effects described above, developed sites on public lands are associated with frequent and/or prolonged human use that may include continuous or frequent presence of food and attractants.

As of June 2021, five developed day-use only sites and five developed overnight use sites occur on the Forest within BMU 22. A total of three developed sites with overnight use, 17 sites with day-use only, and five administrative sites occur on the Forest within the NCDE recovery zone. No developed recreation sites occur on the Forest within the BE recovery zone. As of June 2021, a total of 27 recreation residences, 56 recreation sites with overnight use, 83 day-use only recreation sites, and 52 administrative sites occur on the Forest outside of the recovery zones. The locations of existing developed recreation sites on the Forest are shown in figure 3 in Appendix 1 of the biological assessment (U.S. Forest Service 2022).

No specific Forest plan direction pertains to developed recreation sites within BMU 22 within the CYE recovery zone. Within the NCDE recovery zone, standard NCDE-STD-AR-05 limits any increase in the number and capacity of developed recreation sites that are designed and managed for overnight use by the public during the non-denning season to one increase per decade per bear management unit. Guideline NCDE-GDL-AR-03 states that 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 bear management unit. Such measures could include but are not limited to additional public information and education, providing backcountry food-hanging poles or bear-resistant food or garbage storage devices, project design criteria that would limit capacity increases to those needed for public health and safety, and increasing law enforcement and patrols. No Forest Plan direction is specific to coordinating developed recreation sites with grizzly bear conservation in the portions of the Forest outside of the recovery zones.

Dispersed recreational opportunities, as well as non-motorized (e.g. hiking, horseback, mountain biking) recreation, also occur throughout the Forest and are largely composed of dispersed camping along trails and roads. Dispersed recreation consists of those activities that take place outside of developed recreation areas. Dispersed sites generally do not have fees associated with them and have little or no facilities such as toilets, tables, or garbage collection. Dispersed recreation is often intermittent or temporary where humans are not in any one location for long periods of time. Types of dispersed activities that occur on the Forest include, but are not limited to, camping, hiking, fishing, skiing, hunting, gathering huckleberries, horseback riding, river use, and snowmobiling.

Dispersed recreation occurs across much of the Forest, but typically occurs in close proximity to roads. However, opportunities for non-motorized cross country (e.g. hiking or horseback) dispersed recreation, especially for game hunting purposes where people may access areas not commonly visited by people. Outside of the CYE and NCDE recovery zones, grizzly bear density, and therefore the potential for bear-human encounters, is relatively low.

Habituation and food conditioning of grizzly bears is a concern. Habituated grizzly bears may learn to seek out developed and dispersed sites for food rewards. On Forest lands, requirements for proper storage of food, garbage, or other attractants are established and enforced through issuance of special orders. The food and attractant storage order is an important conservation action that has reduced the potential for human-bear conflicts and mortality risk. To aid in trash and food storage, the Forest has installed several bear resistant trash containers and bear resistant food storage boxes across the Forest, mostly located in campgrounds. Whether a location has a bear resistant food container or trash container or not, visitors are responsible for ensuring attractants are stored properly according to the forest-wide food/attractant storage order.

Since 2011, the Forest has had a Forest-wide food/attractant storage order. The current applicable food storage order is the Regional order R1-2023-02, which was updated in February of 2023. This Regional food/wildlife attractant storage order applies Forest-wide and is in effect annually from March 1 to December 31 through calendar year 2028. Under the food/wildlife attractant storage order: (1) during daytime hours, all attractants, including human, pet, and livestock food (except baled or cubed hay without additives) and garbage shall be stored in a bear-resistant manner when not being attended and (2) during nighttime hours, all attractants, including human, pet, and livestock food (except baled or cubed hay without additives) and

garbage shall be stored in a bear-resistant manner unless it is in immediate control, being prepared for eating, being eaten, being transported, or being prepared for storage, as defined in the order. Reference the order for further requirements and definitions. In addition to the Regional order R1-2023-02, Forest Plan standard NCDE-STD-WL-02 requires that a food/wildlife attractant storage special order be in place on Forest lands within the NCDE PCA (recovery zone), NCDE zone 1 (including the Ninemile demographic connectivity area), and NCDE zone 2. The Forest Service's Regional food/attractant storage order covers the entire Forest (and more) and thus, complies with this standard. Although the Regional order expires after 5 years, we reasonably expect (based on past history) that additional food and attractant storage orders that apply Forest-wide will continue to be issued, reissued, or extended for the life of the Forest Plan. It is unlikely that a food and attractant storage order would not be in effect at any given time during the life of the Forest Plan. However, if at any given time a food and attractant storage order is not in effect during the life of the Forest Plan, additional effects to grizzly bears may result that have not been previously analyzed and reinitiation of consultation on the Forest Plan may be necessary.

There is no history of recurring conflicts at developed recreation sites on the Forest. No mortalities on the Forest are known or suspected to be associated with food conditioning or unsecured attractants at developed or dispersed recreation sites. Given the small number of existing developed recreation sites that provide overnight use, food/attractant storage orders and policies that are in place, and Forest Plan direction that discourages expansion of developed recreation sites, the effects of continued implementation of the Forest Plan with regard to developed and dispersed recreation on the Forest may cause disturbance of individual bears but is unlikely to rise to the level of adverse effects by causing habitat displacement or food-conditioning of grizzly bears.

With proper food and attractant storage under the Forest Plan, the potential of attracting grizzly bears would be reduced and the potential for grizzly bear-human conflicts would be minimized. Based on the previous history of no grizzly bear mortalities related to food or other attractants, along with measures taken to continue to manage food and attractants and to minimize the potential for grizzly bear-human conflicts (i.e. food and attractant storage orders Forest-wide), the effects of habituation and resulting grizzly bear-human conflicts are expected to be discountable.

Livestock Grazing

General Effects of Livestock Grazing

Effects of livestock grazing on grizzly bears are generally related to depredations of livestock by grizzly bears, disposal of livestock carcasses, storage of human food and stock feed, and grizzly bear habituation, food conditioning, and mortality risk associated with these activities. Depredating bears may become food conditioned resulting in management actions that remove bears from the population. Livestock can include a variety of animals such as (but not limited to) cattle, horses, mules, sheep, goats, and chickens.

Being an opportunistic feeder, any individual grizzly bear can learn to exploit livestock as an available food source just as easily as they habituate to other human food sources (Johnson and Griffel 1982). Livestock depredations tend to occur independent of natural grizzly bear food

availability (Gunther et al. 2004, Gunther et al. 2012). Grizzly bears have demonstrated the ability to learn livestock depredation behavior. Thus, an assumption can be made that once a grizzly bear has preyed on livestock, it becomes more likely to repeat that behavior, however that is not always the case. Grizzly bears that kill livestock include a range of ages and both sexes (Johnson and Griffel 1982).

The adverse effects of domestic sheep grazing on grizzly bears are well documented (Knight and Judd 1983, Johnson and Griffel 1982). Sheep grazing in occupied grizzly bear habitat poses substantive risks to grizzly bears since in many areas grizzly bears kill sheep much more readily than other livestock and because sheep are often closely tended by herders typically armed and protective of their flock. In one study in the Yellowstone grizzly bear ecosystem, of 24 grizzly bears known to use livestock allotments, 10 were known to kill livestock (Knight and Judd 1983). Of these bears, seven killed sheep, five of which were trapped and fitted with radio transmitters. All but one radio-collared grizzly bear cub that had the opportunity to kill sheep did so. Grizzly bear depredation of domestic cattle is also well documented. Some grizzly bears coexist with livestock and never prey on them (Knight and Judd 1983). As with sheep, grizzly bear predation on cattle may result in the affected bears seeking out domestic livestock to supplement their diet. This in turn will likely cause an increased potential for bear-human conflicts.

Knight and Judd (1983) reported several differences between cattle and sheep conflicts with grizzly bears. They found that all radio-collared grizzly bears known to have come in close contact with sheep killed sheep, but most grizzly bears that encountered cattle did not make kills. They also found that all known cattle kills were carried out by adult bears 7 years or older, while both adults and subadults from 1 year to 13 years old killed sheep. Grizzly bears that killed sheep, usually took multiple sheep over several days. However, in each instance when the sheep were moved out of the area the predation ended (Johnson and Griffel 1982).

The resulting change in feeding behavior from natural foods to livestock often results in an adverse effect to individual grizzly bears because of the potential to relocate or remove the offending grizzly bear. The adverse effect of altered behavioral patterns does not, itself, cause injury to the involved grizzly bear. However, some grizzly bears become chronic depredators that actively seek livestock as prey. These grizzly bears are more likely to be the subject of grizzly bear-livestock or grizzly bear-human conflicts that may lead to their relocation or removal from the wild population through agency control actions.

In addition to livestock depredation, some grizzly bears can become food conditioned to human garbage or livestock feed if allotments are left unclean. Livestock carcasses can also attract grizzly bears similar to other animal carcasses. The presence of livestock carcasses in grizzly bear habitat may alter grizzly bears' behavior by attracting bears to these carcasses and away from other natural food sources as the opportunity allows. Grizzly bears have a strong tendency to return to a carcass for two or more feedings (Johnson and Griffel 1982). This change in habitat use and behavior has the potential to make affected grizzly bears more susceptible to conflicts with humans and particularly livestock riders/herders/permittees. Grizzly bears that become food conditioned also have a higher probability of being removed by agency personnel. Such potential effects can be minimized through implementation of food storage orders and carcass management programs. Proper food storage and treatment, movement or disposal of livestock carcasses can reduce the potential attractants for grizzly bears. Complete cattle carcass

removal from allotments is not always possible due to the large and remote areas grazed by livestock, the size of the carcasses in non-motorized areas, and the difficulty in locating all carcasses over such vast areas, or locating them in a timely manner. In addition, Anderson et al. (2002) noted, "While carcass removal may reduce the concentration of bears in an area, it may not prevent bears from developing depredatory tendencies or repel depredating bears from grazing areas."

Effects of Livestock Grazing in the Action Area

The Forest has 11 active grazing allotments: two within the recovery zones (1 NCDE, 1 CYE), two within NCDE zone 1 and the Ninemile DCA (one in each), and seven outside of the recovery zones, NCDE zone 1, and the Ninemile DCA. None of these allotments are for domestic sheep or other small livestock. These active cattle allotments encompass 80,878 acres, or 3.6 percent of the Forest. Table 5 above displays these allotments by areas of the Forest, inside and outside of the recovery zones. Continued implementation of the Forest Plan will not change the number and location of livestock allotments nor the number and type of animals allowed to graze on these allotments. Forest Plan direction indicates for each Management Area whether or not livestock grazing will be permitted. Additional guidance for Range Practices is provided for MA-12 Wilderness, MA-14 riparian, and MA-20 grizzly bear habitat, which is primarily aimed at avoiding overutilization of forage in areas where cattle naturally tend to congregate. Any future changes would be addressed through separate analyses.

Impacts to grizzly bears from livestock operations potentially include competition for preferred forage, displacement of bears due to livestock-related activity, and direct mortality due to control actions as a consequence of livestock depredation or learned use of bear attractants such as livestock carcasses and feed.

The Forest Plan provides management direction that would be used when annual operating plans are developed, when grazing permits are issued or re-issued, and when allotment management plans are revised or developed. The following are additional Forest Plan components related to livestock grazing management for the NCDE recovery zone and/or NCDE zone 1, including the Ninemile DCA, and are described fully in Appendix 2 of the biological assessment (U.S. Forest Service 2022): NCDE-STD-GRZ-01, NCDE-STD-GRZ-02, NCDE-STD-GRZ-03, NCDE-STD-GRZ-04, NCDE-STD-GRZ-05, NCDE-STD-GRZ-06, NCDE-GDL-GRZ-01, and NCDE-GDL-GRZ-02. In summary, these standards and guidelines incorporate requirements into new or reauthorized grazing permits that reduce the risk of grizzly bear-human conflict, require reporting of livestock carcasses within 24 hours of discovery followed by proper disposal of carcasses, prohibit increases in the number of sheep allotments or permitted animal unit months above the baseline, reduce the number of sheep allotments when opportunities arise (although, no sheep allotments occur on the Forest), prohibit increases in the number of active cattle grazing allotments (recovery zone), limit potential conflict associated with weed control via small livestock, and specify needed measures to protect key grizzly bear food production areas from conflicting and competing use by livestock. These standards and guidelines do not apply to the portions of the Forest outside of the NCDE recovery zone or NCDE zone 1.

No known incidents of grizzly bear mortality or grizzly bear-human conflict have occurred on the Forest as the result of livestock grazing-related management subsequent to the listing of the grizzly bear as Threatened in 1975. Permits for grazing by saddle and pack animals are granted

primarily in support of outfitter and guide operations or Forest administrative use in wilderness areas. No evidence of conflicts between grizzly bears and horses/mules due to depredation or forage competition occurs.

Honeybees, classified as livestock in Montana (MCA 15–24–921), can attract grizzly bears. While some apiaries occur on private land, none occur on the Forest. Forest Plan standard NCDE-STD-SFP-01 requires special-use permits for apiaries (beehives) located on Forest lands to incorporate measures, including electric fencing to reduce the risk of grizzly bear-human conflicts as specified in the food/wildlife attractant storage special order.

No information indicates that the continued grazing of cattle on the Forest will increase impacts or the risk of human-caused mortality on grizzly bears. Forage competition or displacement are also unlikely given the small and declining number of cattle grazing allotments on the Forest (action area). Based on the information for livestock grazing in the action area (no sheep allotments, the small number of cattle allotments, the standards within the recovery zone and NCDE zone 1, and the very long history of no grizzly bear mortalities or grizzly bear-human conflicts associated with livestock), adverse impacts to grizzly bears related to livestock grazing on the Forest during the life of the Forest Plan are not likely.

Vegetation and Fire Management

General Effects of Vegetation and Fire Management

Vegetation and fire management, including activities such as commercial or noncommercial harvest, fire suppression, and fuels treatments (prescribed fire, mechanical treatment, and/or chemical treatment) may impact grizzly bears as a result of the potential for short-term disturbance. Such disturbance involves the presence of humans and often includes the use of motorized equipment. Harvest units are often located in close proximity to existing roads, thus many units may already be avoided by grizzly bears. Also, untreated habitat typically remains widely distributed within project area as well as an action area and would accommodate grizzly bear use during activity.

We expect that grizzly bears would likely leave an area on their own accord in advance of an approaching fire and therefore be out of the area associated with fire suppression activities. However, if suppression activities were to take place prior to an approaching fire, grizzly bears may still be in the vicinity of the suppression activities. Some effects from disturbance may be caused by the overall increase in human activity in a particular area. These activities may include increased vehicular traffic, aerial support and fire camps, any of which may affect a grizzly bear prior to their leaving the area. The possibility of a direct encounter with a grizzly bear by a person or group of people involved in fire management activities is remote. Disturbance effects to grizzly bears as a result of vegetation or fire management would likely be short-term and insignificant.

Longer-term effects related to vegetation management include impacts to grizzly bear cover and forage. A decrease in the amount of cover may result in different effects to grizzly bears and their habitat. If cover is limiting in the project area, either by the amount or distribution, vegetation management may result in negative impacts (Ruediger and Mealy 1978). Reduced cover may increase the visibility of grizzly bears, which may potentially increase their vulnerability to illegal human-caused mortality and/or contribute to movement from preferred

habitats. However, if cover is not limited in an action area, timber harvesting may have either no effect or a positive effect in those situations where food abundance or distribution is improved. By removing or reducing overstory vegetation through harvesting, slashing, and/or burning, sunlight reaches the forest floor or clearing and grizzly bear food production may be increased (Ibid.). This includes foods such as berries and succulent forbs.

In a study on use of harvested stands, Waller (1992) found that use of these stands increased during the berry season, due to some harvested stands having high berry production. If food production or distribution is improved but human activity is not controlled after the completion of harvest activities, negative impacts on grizzly bears may occur due to an increase in the potential for conflicts between humans and grizzly bears (Ruediger and Mealey 1978). Waller (1992) found that of the harvested stands that he studied, those with the highest grizzly bear use had limited access for people due to closed gates and/or over-grown roads. Grizzly bears within his study area that used harvested stands were found at higher elevations and spent little time in lower elevation stands where harvest was most common. Waller attributed this to human use of those lower, more accessible harvested stands. Waller also found that grizzly bears avoided stands where the vegetation had not recovered enough to provide security cover and preferred to use stands that were 30 to 40 years post-harvest.

Zager (1980) found that differences of shrub responses depended on the type of treatment that occurred post-harvest. Among the key shrub grizzly bear foods on clearcut sites where slash was bulldozer-piled before burning, Zager found a consistent decline in canopy coverage when compared to old burns. This is likely due to the extreme heat created by burning slash piles which may kill rhizomes and root crowns and bulldozer use which may also destroy rhizomes and root crowns. In those areas where slash was either broadcast burned or not treated, key grizzly bear shrub foods were generally found throughout the sites, except on skid roads and other severely disturbed areas. On relatively mesic sites, globe huckleberry, mountain-ash and serviceberry generally increased in cover.

The use of wildland fire for resource benefit is typically allowed only where there is some degree of certainty that the fire would go out naturally or could be contained within predefined lines. These types of fires can result in short-term negative effects and/or long-term beneficial effects depending on the vegetation species and fire severity. Some foraging habitat and/or cover may be affected in the short-term. However, natural fire often stimulates the understory and/or increases the vegetative diversity (forbs, grasses, berry-producing shrubs) in high quality grizzly bear habitat, benefitting grizzly bears in the long-term.

Vegetation management activities that would occur during the grizzly bear denning season are not likely to impact grizzly bears. Snow is an excellent sound barrier (Blix and Lentfer 1992) and impacts to denning bears would likely be less in deep snow situations than in shallow snow conditions. It is likely that hibernating bears exposed to meaningless noise, with no negative consequences to the bear, habituate to this type of disturbance (Knight and Gutzweiler 1995).

Often, temporary roads are constructed and/or restricted roads are used in relation to vegetation and fire management activities. Effects from fire suppression activities may result from constructing firebreaks and/or machine lines. These actions may temporarily contribute to the effects related to motorized access or may result in effects to grizzly bears similar to effect of roads on grizzly bears. The impacts of roads are discussed above in the '*General Effects of*

Roads on Grizzly Bears' and the '*Effects of Motorized Access in the Action Area*' sections above. In addition, food and garbage storage at activity sites and camps may attract grizzly bears and contribute to risks. Such effects are also discussed above (see the '*Effects of Food and Attractant Storage and Habituation*' section above).

The use of aircraft, including helicopters, may also be used in vegetation and fire management activities, and in general reduce impacts to grizzly bears where they reduce or eliminate the need for new roads. Helicopter or other aircraft use may elicit a response in grizzly bears. Effects may range from a simple awareness, short-term disturbance or flight response, or displacement from an area (Montana/Northern Idaho Level 1 Terrestrial Biologist Team 2009). In timbered habitats, McLellan and Shackleton (1989) found that an overt avoidance or displacement response occurred with high intensity helicopter activity, such as carrying equipment within 200 meters of a grizzly bear. Helicopter use that is short in duration and low in frequency, would not likely result in significant affects to grizzly bears. Extended helicopter use with multiple passes could interfere with the normal behavior patterns of grizzly bears. However, when considering long-term habitat effects, helicopter use does not use or require roads and may not pose the same chronic displacement effects or mortality risks that roads-based operations do. Helicopter use is a temporary event, whereas roads can be features on the landscape long after a project is complete. Consequently, while short-term helicopter activities may impact grizzly bears, they do not impart the same chronic habitat effects as roads. If repeated, low altitude flights continue into multiple seasons, the effects upon grizzly bear behavior (i.e., avoidance and more than just temporary disturbance) may become more substantial.

The effects to grizzly bears of repeated, low altitude flight paths that follow open roads may be partially offset by the existing under-use of habitat in the immediate vicinity of the roads due to the "avoidance" by grizzly bears of habitat in close proximity to open roads. In many cases, the effects of helicopter use that occurs in roaded habitat would have insignificant effects to grizzly bears. However, helicopter use in areas that are not highly roaded could result in adverse effects to grizzly bears adapted to using more secure habitat. Thus, the effects of helicopter use on grizzly bears can vary considerably; as such, effects will be determined through an analysis of site-specific activities and conditions in the area.

Effects of Vegetation and Fire Management in the Action Area

The existing environmental baseline is characterized by a forested matrix with early successional stages created by vegetation management and wildfires. The current environmental baseline provides a variety of bear foods while maintaining a mosaic of food and cover. The Forest Plan established a forest-wide objective to "provide for the maintenance of a diverse mosaic of vegetational development, well distributed across the Forest to ensure ecological integrity". Vegetation treatment, including prescribed fire, is encouraged to improve habitat for various wildlife species and groups. Harvesting has been used within the action area as a tool used to achieve a variety of resource objectives, including but not limited to lowering fuels and fire risk; establishing desired tree species; improving tree growth; reducing impacts of insects or disease; contributing wood products to the local economy; improving wildlife habitat; and salvaging the economic value of trees killed by fire or other factors.

The Forest Plan components related to vegetation and fire management are described fully in Appendix 2 of the biological assessment (U.S. Forest Service 2022), which is incorporated by

reference. All of the Forest land within the BE recovery zone is designated as Wilderness, where natural processes generally predominate without human intervention. The Forest Plan does not have specific direction to coordinate vegetation management with grizzly bear conservation in the CYE recovery zone or outside of the recovery zones. Vegetation management within the NCDE recovery zone includes desired conditions and guidelines that address considerations for the timing of activities to reduce the risk of disturbance/displacement, encouraging bear foods and retaining cover, and cessation of activities if needed to resolve a grizzly bear-human conflict situation. These plan components would sustain healthy, resilient plant communities on which grizzly bears depend for food and cover and would reduce the risk of disturbance to bears during or as a result of vegetation management activities, and to maintain or increase habitat and cover where possible. Vegetation management must also adhere to other grizzly bear related guidance, including standards regarding motorized route density and food storage orders.

Under the Forest Plan, approximately 1,239,000 acres (about 56 percent of the action area) are identified as suitable for timber production (the purposeful growing, tending, harvesting, and regeneration of rotational crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use, not including production of fuelwood or harvest from unsuitable lands). The 1986 Forest Plan, recognizing the need to protect soil and water resources and other multiple uses, projected that the average annual harvest would be 133 MMBF during the 2001-2030 time period (U.S. Forest Service 2022).

Looking at the past tree harvest levels completed on the ground (described in baseline section above) and the anticipated increase in capacity, regeneration harvest is likely to increase to about a total of 3,000 acres per year in about five years. This increase of regeneration harvest is not likely to jump in one year but rather a slow increase each year until reaching the 3,000 acres per year in the fifth year (U.S. Forest Service 2022, additional information). Intermediate harvest and non-commercial thinning are likely to remain about the ten year average.

About 845,500 acres or 38 percent of the action area are identified as unsuitable for timber production on the Forest. In addition, timber production is largely limited on about 181,500 acres of riparian areas or about 8 percent of the action area. Areas that are not suitable for timber production include wilderness areas, recommended wilderness areas, Rattlesnake Natural Area and Botanical Areas, and others. In addition, lands with marginal timber growth potential based on landscape or vegetation characteristics, areas with limited access, or areas with certain other management emphasis (e.g., big game winter range) are included in unsuitable lands for timber production. However, tree harvest could occur for other multiple use values and purposes in areas identified as unsuitable for timber production. Inventoried roadless areas make up about 22 percent of the Forest's unsuitable land for timber production and like other areas identified as unsuitable land for timber production, the occasional need to cut and remove commercial size trees for other resource needs does occur. This is not a common practice on the Forest but when it does occur it is usually narrow in scope and limited to a small area.

Wildfire has a strong influence on the age distribution and spatial arrangement of Forest vegetation. While acres affected by wildfire will be highly variable, the size and severity of wildfires are expected to continue to increase due to climate change. The types of activities associated with wildfire suppression are described in the baseline section above.

Since decisions regarding management of wildfires are made using site-specific information as individual fires occur, a prediction on the number of acres of wildfire that may be managed for resource benefit was not made. Decisions on whether to manage a wildfire for resource benefit will include an analysis of the site-specific information such as location of a wildfire start, natural and human resources and values at risk, timing of fire occurrence, current and predicted weather, local and national resource availability, and other factors. Thus, it will be determined at the time of a wildfire event whether the appropriate action will be suppression or to manage the wildfire for resource benefit, or a combination of these options.

Based on our history of consultation on vegetation and fire management projects, information in our files, and the analysis under the '*General Effects of Vegetation Management*' section above, the effects of vegetation and wildfire management activities on grizzly bears can range from none if grizzly bears are not expected to be in the area (i.e. they have fled the area ahead of the fire) to minimal disturbance to displacement depending on the types of activities used. We do not anticipate that vegetation and fire management activities by themselves would result in effects to grizzly bears that would be significant and impact breeding, feeding or sheltering. The Forest will consider and analyze the potential effects to grizzly bears for future site-specific vegetation and/or fire management projects or emergency wildfire suppression actions during the site-specific project analysis process. Site-specific consultation with the Service will occur as necessary.

Grizzly bears are habitat generalists and would be able to shift their use to low disturbance areas within their home ranges during treatment activity. Thus, disturbance effects are expected to be minimal. Future proposed vegetation and fire management actions are expected to provide sufficient habitat for grizzly bears, such as connectivity, cover, forage, and denning habitat, among others. We expect that forest, grassland, shrubland, and riparian habitats would be managed to provide early, mid, and late successional vegetation stages. Based on decades of previous consultation, the effects to important habitat features such as connectivity, cover, forage, and/or denning are expected to be minor and insignificant and potentially beneficial. While proposed activities would likely open up patches of forested habitat and travel may be altered somewhat, areas of untreated forest typically remain and treatments are not expected to create barriers to movement or preclude travel. Linkage and habitat connectivity are not likely to be significantly affected.

With proper food and attractant storage (i.e. the Forest-wide food/attractant storage order), the potential of attracting grizzly bears into the treatment units would be reduced and the potential for conflicts between grizzly bears and personnel associated with the action would be minimized. With such measures taken to minimize the potential for grizzly bear-human conflicts, the effects of such conflicts are expected to be discountable.

Activities that occur along with vegetation and fire management actions, such as temporary road construction, restricted road use, or helicopter use, may result in additional effects to grizzly bears. Such effects could range from insignificant to significant depending on site-specific information. The effects of temporary roads are discussed in the '*Effects of Motorized Access in the Action Area*' sections above. General effects of helicopter use are discussed above in the '*General Effects of Vegetation Management*' section. Potential effects that may occur as a result of temporary road use, restricted road use, and/or helicopter use associated with vegetation

management would be considered in a site-specific analysis. Some of those effects may tier to this programmatic consultation as described above.

In summary, with the exception of effects related access management or helicopter use, which may be adverse at times, we do not anticipate adverse effects to grizzly bears as a result of vegetation and/or fire management within the action area. Related motorized access and helicopter use may or may not result in adverse effects to grizzly bears and any effects would be considered in a site-specific analysis. Again, site-specific project analyses will occur to determine the potential effects of any proposed action. The effects on grizzly bears associated with fire suppression and/or wildfire for resource benefit would be analyzed after the suppression activities and/or wildland fire are complete, with emergency consultation occurring when appropriate.

Energy and Mineral Development

Effects of Energy and Mineral development in the Action Area

The production of oil and natural gas on federal lands is conducted through a leasing process under the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (PL 100–203). Mineral development refers to surface and underground hardrock mining and coal production, which is regulated by permits on National Forest System lands under the Mining Act of 1872, as amended through PL 103–66. The Mineral Materials Act of 1947, as amended through PL 96–470, provides for the sale or public giveaway of certain minerals such as sand or gravel.

No gas or oil exploration or development is occurring on the Forest at this time. The potential for oil and gas resources on the Forest is considered to be low. The Forest-wide Standard 41 requires: "Before oil and gas lease stipulation recommendations are made, site specific analysis of environmental effects will be made. Stipulations, which are based upon the 1982 Environmental Analysis for Oil and Gas of Non-wilderness Lands on the Forest, 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." Thus, the magnitude of effects from leasable or locatable minerals exploration and development would be limited by provisions of the 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 (U.S. Forest Service 2022). Any future gas or oil developments would undergo a site-specific review and analysis of effects and site-specific consultation if applicable.

Two active gold mines and one quartz crystal mine are located on the Forest outside of the NCDE recovery zone, NCDE zone 1, Ninemile DCA, CYE recovery zone, and Bitterroot recovery zone. Each of these mines has less than 1/2 acre of surface disturbance. These are both likely to continue to operate in accordance with the Forest Plan and may cause disturbance to grizzly bears that are in the vicinity of the mines. Before any new mining operation could begin, the claimant would have to file a notice of intent and a plan of operations with the Forest Service. A plan of operations would trigger the NEPA process to evaluate environmental effects

of the proposal and an analysis of effects and site-specific consultation for grizzly bears would occur if applicable.

Additional forest plan desired conditions, standards, and guidelines specific to the NCDE recovery zone, NCDE Zone 1, and the Ninemile DCA, are designed to avoid, minimize, and/or mitigate impacts to grizzly bears or their habitat, subject to valid existing rights. Standard NCDE-STD-MIN-08 requires no surface occupancy for any new leases for leasable minerals within the NCDE recovery zone. Several additional standards associated with mineral development, including standards NCDE-STD-MIN-01, 02, 03, 04, 05, 06, and 07 include measures to reduce, minimize, and/or mitigate potential impacts to grizzly bears in the recovery zone and NCDE zone 1. These standards are displayed in full in Appendix 2 of the biological assessment, which is incorporated by reference (U.S Forest Service 2022). Guidelines related to the management of energy and mineral development and grizzly bears that are also in place for the NCDE recovery zone and NCDE zone 1 are also displayed in Appendix 2 of the biological assessment. In summary, these standards and guidelines provide for modification or temporary cessation of activities if needed to resolve a grizzly bear-human conflict situation; mitigate impacts associated with land, vegetation, and water disturbance; provide food storage and sanitation requirements; provide timing requirements, mitigate impacts associated with motorized access, require safety training related to living and working in grizzly bear habitat; recommend avoidance of recurring helicopter use and establishing landing zones in important grizzly bear habitat, suggest use of noise-reduction technology; recommend maintaining wildlife cover to provide habitat connectivity; mitigate impacts to grizzly bear habitat; recommend carrying bear spray; and recommend use of existing gravel pits before construction of new pits.

Activities associated with energy and minerals exploration and development have the potential to impact individual grizzly bears. Many of the impacts are associated with motorized access and are discussed above in the '*General Effects of Roads on Grizzly Bears*' and the '*Effects of Motorized Access in the Action Area*' sections above. In addition, food and garbage storage at activity sites and camps may attract grizzly bears and contribute to risks. Such effects are also discussed above (see the '*Effects of Food and Attractant Storage and Habituation*' section above). Finally, general effects associated with helicopters are discussed above in the '*General Effects of Vegetation and Fire Management*' section above.

Given the small footprint and overall low level of mineral and energy development activity in the action area (the Forest) and the application of design features and measures intended to prevent or minimize effects to grizzly bears, any grizzly bears that occur in the vicinity of activity related to mineral and energy development activities would likely have options to move to more undisturbed, available habitat. If grizzly bears are using the area in the vicinity of a proposed activity related to mineral development, we would expect some level of short-term disturbance from areas of activity. With the exception of potential adverse effects associated with motorized access or helicopter use, the remaining effects associated with energy and/or mineral development are not likely to be adverse to grizzly bears and grizzly bear habitat conditions. Any additional effects not specifically addressed here would be addressed in a site-specific consultation if the site-specific action 'may affect' grizzly bears.

Connectivity

The Forest has goals and desired conditions that will encourage management actions that do not impair and may enhance habitat connectivity and genetic exchange between recovery zones. For example: Forest-wide goal 7 states "For threatened and endangered species occurring on the Forest, including the grizzly bear, gray wolf, peregrine falcon, and bald eagle, manage to contribute to the recovery of each species to non-threatened status" and desired condition NCDE-DC-WL-02 states "Within the NCDE primary conservation area and zone 1 (including the Ninemile demographic connectivity area), grizzly bear habitat on NFS lands contributes to sustaining the recovery of the grizzly bear population in the NCDE and contributes to connectivity with neighboring grizzly bear recovery zones." The NCDE grizzly bear population has been increasing in numbers and expanding its range, and the NCDE grizzly bear conservation strategy is aimed at maintaining or increasing the population. We anticipate that under continued implementation of the Forest Plan, the NCDE population will be capable of serving as a source population for other recovery zones where the bear population is smaller or absent. Secure habitat provides an important component to habitat connectivity. While no Forest Plan standards require management of secure habitat outside the recovery zones, certain management areas do limit or restrict construction of motorized routes, as previously described. Habitat conditions that provide for the movement of grizzly bears are not expected to change substantially in a manner that would impede grizzly bear movements over the remaining life of the Forest Plan. Continued implementation of the Forest Plan is likely to continue to maintain or improve habitat connectivity and demographic connectivity on the Forest between the NCDE, CYE, and/or BE recovery zones.

Effects Summary

A Federal action is a framework programmatic action if it approves a framework for the development of future action(s) that are authorized, funded, or carried out at a later time. The Forest Plan is a framework programmatic action, i.e. it provides direction for future actions that may be authorized, funded, and/or carried out by the Forest and it does not in itself mandate or approve future implementation of activities on the Forest. In this framework programmatic consultation on the Forest Plan, we describe the potential effects of the continued implementation of the Forest Plan using the best available information and made every effort to capture the majority of anticipated effects. It is not possible to account for all potential effects that may occur as a result of future actions that occur under the Forest Plan direction. Thus, it is important to note that any effects resulting from any site-specific action subsequently authorized, funded, or carried out under the Forest Plan that are not addressed in in this biological opinion will be subject to subsequent site-specific section 7 consultation as appropriate.

In reviewing the effects of the continued implementation of the Forest Plan on grizzly bears across the action area, the overwhelming majority of Forest management actions that may have the potential to adversely impact grizzly bears include motorized access. Effects related to motorized access management will vary depending on site-specific information. Not all actions related to motorized access that may be proposed under the Forest Plan will result in adverse effects. We do not anticipate adverse effects as a result of non-motorized recreation, food and attractant storage and site development, livestock grazing, vegetation and fire management, or energy and mineral development, except for the effects that may be associated with motorized

access management, including potential helicopter use, which may be adverse at times depending on the site specific information.

As anticipated in the Recovery Plan, grizzly bears are expanding their range outside of the recovery zones. Grizzly bears outside of recovery zones probably experience a higher level of adverse impacts due to land management actions than grizzly bears inside the recovery zones. However, grizzly bears are able to live in habitat in the action area outside of the recovery zones. As grizzly bear numbers increase in the action area and expand their range, it is possible that the Forest will experience an increase in conflicts involving grizzly bears and human use. Nevertheless, we conclude that the Forest Plan contains measures that minimize the potential for adverse impacts to grizzly bears from Forest management activities within the action area.

Portions of the action area have high levels of motorized routes and low amounts of secure habitat while other portions have low levels of motorized routes or no motorized routes at all and high levels of secure habitat. Permanent and temporary route construction and use, and temporary use of restricted routes may also occur on a project by project basis. Permanent routes may be used during the short-term for a project and then restricted with a barrier with the potential for future administrative use or may be used for the long-term and receive a substantive amount of use if kept in an open status. Temporary use of newly constructed routes and use of restricted routes may be short-term in duration or may occur on the landscape for several years and receive a substantive amount of use.

Forest lands within BMU 22 in the CYE recovery zone recently met the access management standards for the BMU and are expected to remain as such through the duration of the Forest Plan. Permanent route construction within the CYE recovery zone is limited by standards. Since BMU 22 has standards to meet for OMRD, TMRD, and secure core, in order to construct permanent routes in these areas, other roads would likely need to be decommissioned depending on location and other site-specific details.

Within the CYE recovery zone, Forest Plan direction allows the Forest to temporarily affect underlying core area (i.e., any core habitat that is affected by the subject road and its buffer) within a BMU once per 10-year time frame, and not to exceed 1 bear year, for the sole purpose of completing road decommissioning/stabilization activities on existing closed or barriered roads in core area habitat. Subsequent needs to re-enter individual core areas within a BMU more frequently than once per decade for the purposes of road decommissioning would be analyzed on a case-by-case basis. Also within the CYE recovery zone, temporary administrative use of restricted routes shall not exceed 60 vehicle round trips per active bear year per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30). While temporary effects to motorized access conditions may occur, the extent of area on the Forest that could be affected is limited due to the limitations of the Forest Plan direction in the CYE recovery zone.

With a few exceptions, current motorized access conditions within the NCDE recovery zone and NCDE zone 1 are expected to be maintained under the Forest Plan. Forest lands within the NCDE recovery zone and NCDE zone 1 would be managed for no net increase above the 2011 baseline motorized access conditions, as updated. Secure habitat within the portion of the Forest outside of the recovery zones could change under the Forest Plan, with a potential decrease in the

amount of secure habitat. However, as described above, the likelihood of a substantial decrease is low. If such changes were to occur within the action area, the effects related to displacement of grizzly bears may also increase.

Within the NCDE recovery zone, Forest Plan Standard NCDE-STD-AR-03 allows for temporary increases in OMRD and TMRD for projects, not to exceed a 5 percent temporary increase in OMRD and not to exceed a 3 percent temporary increase in TMRD, both calculated over a 10-year running average. NCDE-STD-AR-03 also allows temporary effects to secure core during project activities with a limit of 2 percent temporary decrease in secure core calculated over a 10-year running average. NCDE-STD-AR-04 specifies that temporary public motorized use of restricted roads is not authorized within secure core. Temporary road construction and/or use within the NCDE recovery zone would be managed via these standards and would be expected to meet these standards. Temporary project implementation within the NCDE recovery zone is not expected to exceed 5 years (NCDE-GDL-AR-01). Further, under guideline PCA-NCDE-GDL-02, pre-project conditions (i.e., OMRD, TMRD, secure core) would generally be restored within 1 year of project completion. While the Forest may deviate from guidelines with an approved exception, it is not known at this time what exceptions may be used. Thus, the guidelines, as written, will be used for the effects analysis. If the guidelines are not met for any given site-specific action, site-specific consultation may be necessary depending on the site-specific information and effects.

Outside of the recovery zones, for the purposes of this consultation, the Forest estimated that the construction and use of permanent routes would not permanently decrease the amount of secure habitat in any given GBAU by more than 1 percent over the life of the Forest Plan and that temporary project routes and/or temporary use of restricted routes would not temporarily decrease the effectiveness of secure habitat by more than 5 percent in any given GBAU at any given period of time. Projects may span more than one GBAU and for those projects, a project would not temporarily affect secure habitat by more than 5 percent in each of the GBAUs.

We do not expect all permanent or temporary routes (including use of newly constructed routes and/or use of restricted routes) to have adverse impacts on female grizzly bears and/or their dependent offspring, or that all female grizzly bears and/or their dependent offspring would be adversely affected by these routes. Some adult females have proven that they are able to successfully reproduce and raise young in BMUs, subunits, and outside of the recovery zones that exceed research benchmarks for adverse effects to grizzly bears (Kasworm et al. 2022a, Costello and Roberts 2022). However, if under-use of key feeding and sheltering habitat by female grizzly bears and/or their dependent offspring is significant, they may fail to obtain the necessary resources to breed and successfully reproduce. The level of effects would depend on such things as grizzly bear use in the action area, location of the road, (i.e. does it affect secure habitat), length of the road, the frequency and intensity of use, and the duration the road would be on the landscape, in relation to those factors listed above for effects of roads.

The effects of displacement and under-use of habitat related to the existing motorized access conditions, limited permanent route construction and use, temporary route construction and use, and temporary use of restricted routes are tempered by local resource availability, resource condition, seasonal use, and the number of grizzly bears using an area. Currently, the number of grizzly bears using the action area varies, with use ranging from higher use in the NCDE recovery zone and NCDE zone 1 to very low or none in BMU 22 of the CYE recovery zone and

portions of other areas outside of the recovery zones and NCDE zone 1. For some areas of the Forest, grizzly bears numbers are very low to none and are expected to increase slowly over time. This is particularly true for female grizzly bears and presence of female grizzly bears within some portions of the action area (Forest) is likely to increase slowly. For the GBAUs lacking female grizzly bear use, until such time that female grizzly bears begin to use these GBAUs, the existing motorized access conditions, limited permanent routes, temporary routes, and temporary use of restricted roads are not likely to result in adverse effects to grizzly bears.

As such, while ongoing adverse effects from existing low amounts of secure habitat and high route densities in some portions of the action area may result in the displacement of individual grizzly bears, the avoidance of suitable habitat, and/or the reduction of habitat to an unsuitable condition, we anticipate that these adverse effects would affect only few adult females and/or their dependent offspring over the remaining life of the Forest Plan. We conservatively include the potential for adverse effects in areas lacking female grizzly bear use due to the long time-frame that the Forest Plan will be in effect, during which some females may begin to use these GBAUs and experience some level of adverse effects from the ongoing motorized access conditions and low amounts of secure habitat and/or permanent routes, temporary routes, or temporary use of restricted routes that affect secure habitat.

Because some adult females have proven that they are able to successfully reproduce and raise young in BMUs, subunits, and areas outside of the recovery zone that have less than optimal motorized access conditions and/or low amounts of secure habitat, we do not expect that all adult females exposed to motorized routes would suffer significant effects, nor would the effects persist throughout an individual female's life span. We expect that effects would vary substantially depending upon the wariness of the individual bear, the size of and habitat quality within their home range, the number of other grizzly bears using the particular area, climate conditions, annual food resources, and the nature, intensity and duration of human activity during any particular year. All of these are factors that may affect options available to adult females if displaced. Additionally, conditions the following year may be considerably different. Thus, not all female grizzly bears and/or their dependent offspring that may use the action area during the life of the Forest Plan will experience significant effects related to motorized access management. If or when female grizzly bears begin to use the portions of the action area with very low to no grizzly bear use currently, specific areas with higher motorized route densities may lead to the under-use of suitable habitat by grizzly bears and may significantly impact some grizzly bears' ability to find food resources, breed and raise young, and find shelter. However, grizzly bears moving into these portions of the action area may be able to tolerate the existing levels of motorized route densities or may be able to entirely avoid areas with roads in some GBAUs without significant effects to breeding and/or feeding due to less competition from other grizzly bears.

The Service anticipates that over-snow vehicle use (snowmobile) that may occur under the Forest Plan may incidentally result in some very low level of adverse effects to female grizzly bears with offspring during den emergence. Over-snow vehicle use would be restricted on large proportions of denning and spring habitat on the Forest and thousands of acres of denning and spring habitat would be legally unavailable to over-snow vehicle use in the broader area where grizzly bears may occur. Where grizzly bears and over-snow vehicle use do generally overlap, there is still some spatial separation. However, the potential of over-snow vehicle use adversely impacting an individual female grizzly bear with offspring cannot be eliminated.

The best information available indicates that snowmobile impacts to grizzly bears emerging from dens was a higher concern than impacts to denning bears (Graves and Ream 2001). The Service concludes that snowmobile-generated disturbance to grizzly bears in dens during the deep of winter is not likely to rise to the level causing significant impairment of breeding or sheltering to the point of injury or death. In spring, disturbance from snowmobiles to grizzly bears in dens may cause premature den emergence. Based on naturally earlier den emergence of male bears and females without young, their independence, and their mobility, the Service does not anticipate the effects of disturbance caused by snowmobiles would be adverse to male grizzly bears or female grizzly bears without cubs.

However, late season snowmobile use may cause a female grizzly bear with cubs to prematurely leave a den in the spring or cause a recently emerged female with cubs to be prematurely displaced from her den or den site, potentially resulting in decreased fitness of the adult female bear and/or decreased fitness or abandonment of her dependent offspring. If the dependent offspring attempt to follow their mother from a den site prior to their gaining some mobility, they may suffer from decreased fitness or death.

In total, about 29 miles and approximately 205,100 acres of denning habitat are open to over-snow vehicle use during the during the den emergence period beyond March 31. About 24 miles occur within the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA and 5 miles occur outside of this area. No trails for over-snow vehicle use are identified in the OSVUM for the CYE and no over-snow vehicle use trails or roads are used within the BE. Of the 205,100 acres of denning habitat that are open to cross-country over-snow vehicle use during the den emergence period, about 58,200 acres occur in the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA, about 22,800 acres occur within the CYE Recovery Zone in BMU22, and about 124,100 acres occur within the areas outside the NCDE, CYE, and BE recovery zones, NCDE zone 1, and the Ninemile DCA. The portion of the BE Recovery Zone on the Forest is entirely within an area closed to over-snow vehicle use, thus no acres of over-snow vehicle use overlaps potential denning habitat. While these acres are open during the den emergence period, from a qualitative review, not all of these acres of cross-country over-snow vehicle use are available for such due to either the ruggedness of the terrain or logistical limitations (e.g., fuel). In addition, some areas may not be available to over-snow vehicle use after March 31st due to a lack of snow, particularly on the Plains/Thompson Falls Ranger District where it is largely drier and lower elevation.

Although the Forest's management of grizzly bear habitat may result in direct and indirect adverse effects on individual grizzly bears, we do not anticipate that these effects will have appreciable negative impacts on the grizzly bear populations or the listed entity as a whole. Grizzly bears have been expanding their range into areas with higher than optimal (for grizzly bears) human use levels and mortalities and conflicts in the action area (the Forest) are rare to non-existent.

Much of the action area is located outside of the recovery zones. The Recovery Plan stated that grizzly bears living within the recovery zones are crucial to recovery goals and hence to delisting. Grizzly bears inside and outside of recovery zones are listed as threatened under the Act, but only lands inside the recovery zones are managed primarily for the recovery and

survival of the grizzly bear as a species. In developing the recovery zones, all areas necessary for the conservation of the grizzly bear were included.

Even though much of the action area is outside of the recovery zones, the Forest has managed and will continue to manage the lands in such a way that has allowed grizzly bears to expand. Thus, although individual female grizzly bears may be adversely affected at times over the remaining life of the Forest Plan, we anticipate that grizzly bear numbers and use will continue to increase within the action area into the future.

CUMULATIVE EFFECTS

The implementing regulations for section 7 define cumulative effects as those 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. As this biological opinion is at a programmatic scale for the entire Forest and due to the long duration of the Forest Plan, it is not possible to capture all cumulative effects that may occur during the life of the Forest Plan. The analysis below describes any known cumulative effects and provides a qualitative description of the types of potential cumulative effects we would expect during the life of the Forest Plan. While some actions and associated effects are not *certain* to occur, it is reasonable to assume they may occur at some point over the long life of the Forest Plan and this consultation considers the cumulative effects generally.

Due to the extremely large action area for the Forest Plan (the entire Forest), the long duration of the Forest Plan, and because information for non-federal entities is often incomplete or inaccurate, the cumulative effects analysis completed by the Forest was more of a qualitative approach. Below is a summary of potential effects based on the cumulative effects analysis provided by the Forest in the biological assessment, which is incorporated by reference (U.S. Forest Service 2022). This summary includes the best available information that the Forest and Service have and may not include all potential cumulative effects as non-federal entities may undertake additional actions not disclosed here. This qualitative approach is likely to capture the types of effects we would expect to occur even though we may not have site-specific information at this time. Any future site-specific cumulative effects will be analyzed during future site-specific project consultations.

The Montana Department of Natural Resources and Conservation (DNRC) administers 5.2 million acres of school trust lands throughout the state to achieve the mission of producing long-term income for the designated trust beneficiary (such as schools). The DNRC's state forest land management plan emphasizes intensively managing for healthy and biologically diverse forests to provide a reliable and sustained income. The state forest land management plan also directs the transportation system to be planned for the minimum number of road miles. The DNRC will only build roads that are needed for current and near-term management objectives, as consistent with the other resource management standards (U.S. Forest Service 2022).

The Clearwater State Forest is located within the action area, northeast of Missoula, Montana, and is approximately 18,076 acres in size. The DNRC also manages scattered small parcels in the vicinity of the Forest (action area). These include scattered parcels in the DNRC Plains, Missoula, and Clearwater units. In 2011, the DNRC developed a habitat conservation plan

(HCP) for the scattered parcels that is designed to minimize and mitigate impacts on five terrestrial and aquatic species, including the grizzly bear. The HCP provides guidance to ensure the long-term conservation needs of HCP species during timber harvest, road construction and use, and grazing activities over a 50-year period.

The DNRC lands may regularly see activities such as maintenance and use of roads, trails, and utilities; recreational activities such as hunting, hiking, mountain biking, camping, horseback riding, driving, motorcycle and ATV riding; and gathering of firewood and miscellaneous forest products. Based on past history and the current levels of visitors to the area, the activities listed above are expected to continue to occur, at minimum, at levels similar to the past but may increase in the future to meet public demand. These activities are expected to have local effects by altering habitat used by grizzly bears and disturbing and/or displacing grizzly bears. Whether such effects are adverse or significant would be dependent on site-specific conditions.

Human activities also increase the chance of conflict with bears and thus, the chance for grizzly bear mortality. DNRC has food storage requirements for their lands, which help to minimize the potential for grizzly bear-human conflicts. As a partner in the Blackfoot Challenge, the DNRC placed bear-resistant dumpsters at state land locations where bear-attractant conflicts have been known to occur. The DNRC provides all of its cabin lessees with the brochure "Living with Bears" that explains measures that should be taken to minimize human-bear conflicts. No DNRC employees or contractors have been involved in a human-grizzly bear conflict that resulted in a management action or death of a grizzly bear.

The goal of the commitments made for grizzly bears in the 2011 HCP is to support Federal conservation efforts by providing important seasonal habitat and limitations on activities affecting bears within those habitats. While cumulative effects may occur as a result of projects on DNRC lands, the HCP applies conservation commitments across a larger geographic area within DNRC's forested trust lands than previously and increases the level of conservation based on the importance of that habitat for bears (e.g., more commitments in recovery zones); minimizes disturbance and displacement of grizzly bears from human activities; provides for seasonal habitat use and security; and designs timber sales and applies silvicultural prescriptions to maintain important habitat features, including den sites, avalanche chutes, lush riparian zones, and locations that produce high volumes of forage.

Montana Fish, Wildlife and Parks (FWP) completed a grizzly bear management plan for western Montana in 2006 (Dood et al. 2006) and a grizzly bear management plan for southwestern Montana in 2013 (Montana FWP 2013). These plans establish goals and strategies to manage and enhance grizzly bear populations and to minimize the potential for grizzly bear-human conflicts. A long-term goal is to allow the populations in western and southwestern Montana to reconnect through the intervening, currently unoccupied habitats. Montana FWP is also very active in providing public information and education about conserving grizzly bears and their habitat. This includes bear management specialists, including one stationed nearby in Missoula, who provide information and assistance to landowners on appropriate ways to secure food and bear attractants and respond to reports of conflicts with bears. These specialist positions have a proven track record of success in informing the public, reducing the availability of attractants to bears on private and public lands, and resulting in a reduction of human-caused grizzly bear mortalities, thus benefiting grizzly bears overall.

Montana FWP Fish Creek and Blackfoot-Clearwater Wildlife Management Areas (WMAs) are adjacent to the action area. The primary management goal of both WMAs is to provide winter range for elk and compatible recreational opportunities for the public. For example, the Blackfoot-Clearwater Management Area offers antler shed gathering opportunity in the spring which typically draws many visitors into an area that may not experience much other human presence. Pack in/pack out is required for food and garbage at both WMAs, minimizing the potential for human-grizzly bear conflicts. While these efforts have helped to decrease human-grizzly bear conflicts and mortalities of grizzly bears, the potential for grizzly bear mortality (via removal) associated with food storage and habituation still exists on non-federal land.

Montana FWP regulates hunting for black bears and other wildlife species. Hunting of grizzly bears has not been allowed in Montana since 1991. A potential for grizzly bear mortality by hunters does exist as a result of mistaken bear identification or in self-defense, especially in proximity to the carcasses of harvested animals. FWP provides a variety of public information and education programs, including a mandatory black bear hunter testing and certification program, to help educate hunters in distinguishing the two species. Black bear hunting seasons have been shortened in recent years, reducing the potential for mistaken identity. While these efforts have helped to decrease legal and illegal shooting mortalities of grizzly bears, the potential for grizzly bear mortality associated with hunting still exists.

Private lands, including large blocks owned and managed by The Nature Conservancy (TNC), occur within and adjacent to the action area. The human population within northwest Montana, including the action area, has grown at a relatively high rate during the past few decades and growth is expected to continue. Such growth is expected to result in an increase of residential development of private lands within the action area which can result in habitat loss, habitat fragmentation, and increases in human-grizzly bear conflicts. Food and attractant storage issues on private land can create grizzly bear-human conflicts by providing attractants to grizzly bears. Once grizzly bears become habituated and/or associated with a grizzly bear-human conflict, they may be removed. Human population growth could also result in additional grizzly bear attractants and further increase the potential for grizzly bear-human conflicts. As more people use private land and adjoining federal land for homes, recreation or business, the challenge to accommodate those uses in ways that continue to protect the grizzly bear population increases. Private lands continue to account for a disproportionate number of conflicts and grizzly bear mortalities in Montana. These impacts are likely to intensify, although appropriate residential planning, outreach to landowners about how to avoid conflicts, tools such as bear-resistant containers and electric fencing, and assistance in resolving conflicts can help prevent or reduce these impacts.

In addition to conflicts, activities on private land can also be expected to have local effects by altering habitat used by grizzly bears and/or disturbing or displacing grizzly bears. Activities that are currently occurring and are expected to continue into the foreseeable future on non-federal lands include but are not limited to maintenance and use of roads, trails, and utilities; recreational activities such as hunting, hiking, mountain biking, camping, horseback riding, driving, motorcycle and ATV riding; livestock grazing, ranching, and farming; mineral development; and timber harvest, fuels management such as thinning and/or burning, fire management, and gathering of firewood and miscellaneous forest products. Whether such effects are adverse or significant would be dependent on site-specific conditions, with effects ranging from some level of insignificant disturbance to more significant effects such as

displacement. Any motorized access associated with these activities may add to the ongoing significant effects already occurring associated with high motorized access conditions and low amounts of secure habitat. However, not all effects would be significant due to the higher amounts of human activity already occurring in some areas of non-federal land. Effects to grizzly bear habitat conditions such as forage, cover, and denning are expected to be insignificant and similar to the effects described for the proposed action above.

As grizzly bears are managed for recovery within the recovery zones, all land ownerships are considered when calculating motorized access metrics. Any cumulative motorized access effects that may occur as a result of activities on non-Forest lands would be captured in the metrics measured for the subunits (NCDE recovery zone) and/or BMU (CYE recovery zone). Management of grizzly bears outside of the recovery zones is different than within the recovery zones. The Forest often lacks inventory information on non-Forest lands outside of the recovery zones and the best available information regarding motorized access on non-Forest lands outside of the recovery zone is unable to capture all effects of motorized access resulting from non-Forest actions. As such, a 500 meter buffer was placed around Forest land in those areas where Forest land is adjacent to non-Forest land ownerships. Buffering Forest land 500 meters from non-Forest Service land ownerships is a conservative approach when considering effects to grizzly bears and will capture any unknown or undisclosed cumulative effects to grizzly bears that may result from non-Forest actions on non-Forest land that occur adjacent to Forest lands. For example, actions on adjacent non-Forest land could affect secure habitat on adjacent Forest lands, thus cumulatively affecting grizzly bears that use Forest land because areas within 500 meters of motorized access are not considered secure habitat. Accordingly, because it is very often unknown, Forest lands within 500 meters of lands not administered by the Forest may not provide secure habitat due to the potential cumulative effects associated with motorized access on adjacent non-federal lands. While it is possible that Forest land within 500 meters of non-Forest land may provide secure habitat, information as to activity on non-Forest land is often unknown or not disclosed. In addition, the Forest lacks management authority over non-Forest lands. As such, any secure habitat on Forest lands located adjacent to non-Forest land could be cumulatively affected at any time without the Forest's knowledge or authority, as it is not required. Therefore, to be conservative when analyzing cumulative effects to grizzly bears, in order to not miss any potential cumulative effects, Forest land within 500 meters of non-Forest land is buffered out of the secure habitat metric for the Forest. Due to the unknown or lack of information on non-Forest land we are unable to measure secure habitat on these lands. We are not assuming that non-Forest lands are not secure, however, we do not have enough accurate information to determine whether or not secure habitat occurs. Because of the long life of the Forest Plan, it is not possible to know everything that may occur on non-Forest land, nor is it required that non-Forest ownership inform the Forest or the Service of everything that may occur. Due to this potential lack of knowledge and because the Forest has no management authority on non-Forest lands, incorporating this buffer is a conservative approach and accounts for any cumulative effects to grizzly bears from actions that may occur on non-Forest lands without the Forest's knowledge. In other words, any potential unknown cumulative effects have already been incorporated into this analysis ahead of time. For example, if motorized access were to increase on non-Forest land adjacent to Forest land, cumulatively affecting grizzly bears in the action area associated with disturbance and/or displacement, the effects of such are already considered into the metrics of secure habitat that are measured for Forest lands. Accordingly, we would not miss any effects to secure habitat on Forest lands over time, giving the benefit of the

doubt to the species (U.S. Fish and Wildlife Service 1998). Using this conservative approach does not result in significant effects to the grizzly bear populations within the action area.

As described in the baseline section above, any private entity's non-compliance with the Forest's access management is an illegal activity. Even with ongoing efforts by the Forest to deter illegal motorized access, some individuals may continue to break the law and illegally access parts of the Forest via motorized vehicles. Any such illegal motorized access is not considered a Forest (federal) action. While it may be reasonable to assume that some future illegal use of the Forest via motorized access in areas not authorized for such use may occur within the action area, it is not reasonably certain to occur in any specific given area. These, and any other illegal activities are not the result of a federal action and therefore not analyzed under effects of the action, but their influence is considered for potential cumulative effects (due to the entity's illegal actions being non-federal). We have considered the cumulative effects of such illegal motorized access on grizzly bears to the best of our ability despite the uncertainty associated with illegal motorized access.

While illegal use is not considered part of the federal action, the effects of many types of illegal actions are captured in the baseline and effects section above in that if a road is drivable, independent of whether it is legally closed (via MVUM, sign, gate), it is not considered as providing secure habitat. Therefore, in most instances of illegal motorized access, effects to secure habitat would not occur because the area being accessed is not providing secure habitat. How secure habitat is determined is described in detail in the baseline and effects sections above and displays a conservative approach to the analysis so as to not miss any potential effects to grizzly bears. Illegal motorized access may also occur in areas that are not considered drivable, potentially affecting secure habitat. No specific amount or location of illegal motorized access is reasonably certain to occur (as it is not supposed to occur in the first place), however if it does occur, cumulative effects to grizzly bears may occur as a result. The information as to the length, duration, amount of use, type of use, and location, among other conditions, is and will continue to be unknown until such time that illegal use is found to be occurring. The probability of long-term illegal motorized access and probability of illegal motorized access coinciding with the presence of grizzly bears is anticipated to be low but is unknown. As such, the potential consequences to grizzly bears are uncertain. Illegal motorized access is expected to be spatially disparate and temporary and is not likely to collectively cause an adverse effect because most users follow travel regulations and when illegal use is observed or when user-created roads become apparent the Forest corrects the situation as soon as they are able.

Despite the recent growth of the human population and the potential non-federal effects that have been occurring in the past and present, the grizzly bear population in the NCDE is increasing and expanding distribution and has more than doubled since listing (U.S. Fish and Wildlife Service 2022, Costello et al. 2016), while the population in the CYE is experiencing a positive population growth rates of 1.9 percent (Kasworm et al. 2022a). In addition, large federal land ownership (including Forest Service) and large blocks of wilderness within which human access is restricted by regulation and topography serve to reduce the impacts of non-federal actions associated with larger residential human populations on grizzly bears. While federal land management cannot entirely compensate for cumulative impacts on non-federal land, management on Forest Service lands as well as management under the Forest Plan would continue to provide habitat for grizzly bears. Cumulative effects are not likely to result in

significant effects to the NCDE and CYE grizzly bear populations within the action area or the grizzly bear population as a whole.

CONCLUSION

Implementing regulations for section 7 (50 C.F.R. § 402) 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 the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." The Service's section 7 handbook explains that adverse effects on individuals of a species generally do not result in jeopardy determinations unless those effects, when added to the environmental baseline and cumulative effects, are 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 reproducing, numbers, or distribution of that species. Should the federal action result in a jeopardy and/or adverse modification conclusion, the Service may propose reasonable and prudent alternatives that the federal agency can take to avoid violation of section 7(a)(2).

We reviewed and considered: (1) the current status of grizzly bears, which evaluates the range-wide status of the listed entity of grizzly bears; (2) the environmental baseline for the action area, which evaluates the status of grizzly bears in the action area and the factors affecting the species environment within the action area; (3) the effects of the action, which includes all consequences to grizzly bears that are caused by the proposed action; and (4) the cumulative effects, which evaluates the effects of future non-federal activities on grizzly bears that are reasonably certain to occur in the action area. The effects of the action and cumulative effects are added to the environmental baseline and in light of the status of the grizzly bear, the Service formulates an opinion as to whether the action is likely to jeopardize the continued existence of grizzly bears by resulting in an appreciable reduction in the likelihood of both the survival and recovery of the listed entity of grizzly bears in the Coterminous United States.

After reviewing these components, it is the Service's biological opinion that the effects of the continued implementation of the Forest Plan on grizzly bears are not likely to jeopardize the continued existence of the listed entity of grizzly bear. No critical habitat has been designated for this species, therefore, none will be affected. Our conclusion is based on, but not limited to, the information presented in the biological assessment (U.S. Forest Service 2022), additional information received during this consultation process, information in our files, and informal discussions between the Service and the Forest.

Actions conducted under the Forest Plan may occasionally result in adverse effects to individual female grizzly bears and/or dependent offspring over the remaining life of the Forest Plan, particularly as a consequence of the potential disturbance and/or displacement related to motorized access management. Based on the best available scientific information reviewed in this consultation, such adverse effects will not negatively impact the recovery of the NCDE or CYE grizzly bear populations, nor the listed entity of grizzly bears as a whole. Further, we expect the Forest Plan direction will result in conditions that support continued grizzly bear use of the action area, especially in the NCDE recovery zone, NCDE zone 1, Ninemile DCA, and CYE recovery zone, as well as use of areas outside of these. Portions of the Forest further removed from the aforementioned areas are expected to continue to be used for dispersal or

exploratory movements and potentially some home range establishment at some point in the future, albeit at densities lower than those in the recovery zones. Thus, it is our opinion that the continued implementation of the Forest Plan would not appreciably reduce the likelihood of both the survival and recovery of the listed entity of grizzly bears as a whole. Below we summarize key factors of our rationale for our no-jeopardy conclusion as detailed and analyzed in this biological opinion. These key factors include, but are not limited to, the following:

Factors related to the Forest Plan:

- In 1993, the Recovery Plan articulated the conservation needs for the recovery of grizzly bears. The Recovery 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 Forest Plan applies to areas both within and outside of the recovery zone.

- We do not anticipate adverse effects as a result of food and attractant storage and site development, livestock grazing, vegetation management and fire management, or energy and mineral development, except for the potential effects that may be associated with motorized access management or helicopter use.

- Effects related to winter and non-winter motorized access management, including helicopter use, will vary depending on site-specific information. Not all actions related to motorized access that may be allowed and/or proposed under the Forest Plan will result in adverse effects.

- Any effects associated with helicopter use will be analyzed during future site-specific consultations, as necessary.

- In general, the existing (baseline) motorized access conditions, potential permanent and/or temporary route construction and use, and/or temporary use of restricted routes may result in some level of adverse effects to individual female grizzly bears and/or their dependent offspring within the action area, where they may be present. We anticipate these effects to be non-lethal and do not anticipate adverse effects to male or transient grizzly bears that may use the action area.

- Within the NCDE recovery zone, the Monture, North Scapegoat, South Scapegoat, and Rattlesnake Subunits all encompass significant amounts of designated Wilderness and are and will remain better than the research benchmarks of 19/19/68, even if the temporary effects to OMRD, TMRD and secure core occur under projects having temporary effects associated with NCDE-STD-AR-03. These subunits are likely to continue to support the survival and reproduction of female grizzly bears, with no adverse effects anticipated associated with the temporary changes allowed under NCDE-STD-AR-03.

- Within the NCDE recovery zone, the Mor-Dun subunit currently meets the research benchmark values for OMRD, TMRD, and secure core. With temporary effects associated with NCDE-STD-AR-03, TMRD and secure core would remain better than the research benchmarks; however, OMRD may temporarily increase above the benchmark

potentially resulting in some level of short-term adverse effects associated with displacement of grizzly bears in this subunit, which may result in the under-use of suitable habitat by individual female grizzly bears and/or their dependent offspring, which may disrupt normal breeding (or more specifically, cub rearing) or feeding patterns. The amount of disturbance or displacement would depend on site-specific actions and conditions.

- Within the NCDE recovery zone, the Mission and Swan subunits are currently worse than the research benchmarks for OMRD, TMRD, and secure core. Since some level of ongoing adverse effects are likely already occurring as a result of the existing, baseline motorized access conditions in these subunits, use of the temporary increases allowed under NCDE-STD-AR-03 could temporarily further degrade these conditions and may result in additional adverse effects to grizzly bears that may be using the action area. The short-term, temporary increases allowed under NCDE-STD-AR-03 may result in additional under-use of suitable habitat by individual female grizzly bears and/or their dependent offspring, which may disrupt normal breeding (or more specifically, cub rearing) or feeding patterns. The amount of displacement would vary, depending on site-specific conditions (i.e. whether the area is providing secure habitat or is adjacent to other roads) and actions (i.e. duration of use and/or length of road segment).

- Within the CYE recovery zone, temporary access to secure core area may occur within BMU 22 once per 10-year time-frame, not to exceed 1 bear year for the sole purpose of completing road decommissioning/stabilization activities. In addition, temporary administrative use is allowed under certain conditions. As BMU 22 may already be experiencing ongoing adverse effects associated with the existing motorized access conditions (if and when female grizzly bears are present), additional temporary, short-term adverse effects may occur on a project by project basis. Given the improving status of the CYE, it is unlikely this would result in measurable negative effects to the overall CYE population.

- Because some adult females have proven that they are able to successfully reproduce and raise young in BMUs, subunits, and areas outside of the recovery zone that have less than optimal motorized access conditions and/or low amounts of secure habitat, we do not expect that all adult females exposed to motorized routes would suffer significant effects, nor would the effects persist throughout an individual female's life span. While motorized routes in some portions of the action area may result in displacement of some female grizzly bears and/or their dependent offspring from key habitat at some time over the life of the Forest Plan, some grizzly bears are able to persist in areas with higher levels of human pressure, as documented by verified reports of females with offspring (indicating home range use and successful reproduction) in areas of high motorized access that exceed research benchmarks, including areas outside of the recovery zones. In other words, we do not expect the existing, baseline motorized access conditions in all portions of the action area to have ongoing adverse impacts on female grizzly bears and/or their dependent offspring. Nor do we expect all permanent and/or temporary routes or temporary use of restricted routes to have adverse effects on female grizzly bears and/or their dependent offspring. The level of effects would depend on such things as grizzly bear use in the action area, location and length of the road(s), the frequency and intensity of use of the road(s), and the duration that the road(s) would be on the

landscape. Not all females would experience the same effects, thus, some may not be adversely affected as a result of motorized access management under the Forest Plan.

- As described above, while adverse effects from high motorized route densities and low amounts of secure habitat in some portions of the action area may result in the displacement of individual female grizzly bears and/or their dependent offspring, the avoidance of suitable habitat, and/or the reduction of habitat to an unsuitable condition, we anticipate that the adverse effects would affect only a few adult females and/or their dependent offspring over the remaining life of the Forest Plan.

- Motorized access conditions and management will not preclude grizzly bears from using the action area, nor will it form a barrier to dispersal and movement within or across the action area or between the action area and other parts of the grizzly bear ecosystems.

- Late-season over-snow vehicle use, past March 31, is allowed in portions of the action area. Where grizzly bear use and over-snow vehicle use do generally overlap, some level of spatial separation does exist, however, the potential of over-snow vehicle use adversely impacting an individual female grizzly bear with offspring cannot be eliminated during the grizzly bear den emergence period.

- In total, about 29 miles of over-snow vehicle routes and approximately 205,100 acres overlap grizzly bear denning habitat and are open to over-snow vehicle use during the during the den emergence period beyond March 31. About 24 miles occur within the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA and 5 miles occur outside of this area. No trails for over-snow vehicle use are identified in the OSVUM for the CYE and no over-snow vehicle trails or roads are used within the BE. Of the 205,100 acres of denning habitat that are open to cross-country over-snow vehicle use during the den emergence period, about 58,200 acres occur in the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA, about 22,800 acres occur within the CYE Recovery Zone in BMU22, and about 124,100 acres occur within the areas outside the NCDE, CYE, and BE recovery zones, NCDE zone 1, and the Ninemile DCA. The portion of the BE Recovery Zone on the Forest is entirely within an area closed to over-snow vehicle use, thus no acres of over-snow vehicle use overlaps potential denning habitat. Currently, grizzly bears are only known to den in the NCDE. Thus, some of the areas mentioned above do not currently have denning grizzly bears but due to the long-term nature of the Forest Plan such use could occur in the future.

- While many of these acres open to over-snow vehicle use during the den emergence period, from a qualitative review, not all of these acres of cross-country over-snow vehicle use are available for such use due to either the ruggedness of the terrain or logistical limitations (e.g., fuel). In addition, some areas may not be available to over-snow vehicle use after March 31st due to a lack of snow, particularly on the Plains/Thompson Falls Ranger District where it is largely drier and lower elevation.

- While some level of non-lethal adverse effects to individual grizzly bears may occur related to actions carried out under the Forest Plan, they are not expected to have a negative effect on the survival and recovery of the listed entity of grizzly bears.

- The Forest has managed and will continue to manage their lands in such a way that has allowed grizzly bears to expand in numbers and distribution. Thus, although individual grizzly bears may be adversely affected at times over the remaining life of the Forest Plan, we anticipate that grizzly bears use will continue to increase within the action area into the future.

Factors related to the NCDE grizzly bear population:

- Kendall et al. (2009) produced a final total NCDE grizzly bear population estimate of 765 grizzly bears for 2004 (Ibid.), more than double the recovery plan estimate for that year.

- Kendall et al. (2009) also indicated that in 2004 (http://www.nrmsc.usgs.gov):

    1. Female grizzly bears were present in all 23 BMUs.
    2. The number and distribution of female grizzly bears indicated good reproductive potential.
    3. The occupied range of NCDE grizzly bears now extends 2.6 million acres beyond the 1993 recovery zone.
    4. The genetic health of NCDE grizzly bears is good, with diversity approaching levels seen in undisturbed populations in Canada and Alaska.
    5. The genetic structure of the NCDE population suggests that population growth occurred between 1976 and 2004.
    6. Human development is just beginning to inhibit interbreeding between bears living north and south of the U.S. Highway 2 corridor, west of the Continental Divide.

- Montana Fish, Wildlife and Parks research conducted between 2004 and 2011 indicated an increasing trend in numbers of NCDE grizzly bears (Mace and Roberts 2012). Costello et al. (2016) calculated a growth rate of 2.3 percent for grizzly bears in the NCDE. For the 6-year period of 2016 through 2021, the estimated annual survival rate for independent females within the demographic monitoring area was 93 percent (Costello and Roberts 2022).

- Assuming previously observed vital rates from Costello et al. 2016, the projected population size of grizzly bears in the NCDE for the management period 2019–2023, is 1,068 for 2019 increasing to 1,092 in 2020, 1,114 in 2021, 1,138 in 2022, and 1,163 in 2023 (Costello and Roberts 2022).

- From 2016 through 2021, the average annual number of total reported and unreported (TRU) mortalities for independent females within the DMA was 15, below the maximum threshold of 25 and the average annual number of TRU for independent males was 23, falling below the maximum threshold of 30 (Costello and Roberts 2022).

- The NCDE grizzly bear population currently meets the demographic recovery criteria related to the number of BMUs occupied by family groups and the sustainable human-caused mortality levels for both total and female grizzly bears (U.S. Fish and Wildlife Service 2022b, Costello and Roberts 2022).

- The NCDE grizzly bear population is increasing, which explains the expansion of its range into areas outside the recovery zone. Female grizzly bears with young have been observed outside of the recovery zone, indicating that a number of females are able to find the resources needed to establish home ranges and survive and reproduce outside the recovery zone, despite the lack of specific habitat protections.

- Using verified grizzly bear locations, Costello et al. (2016) estimated that grizzly bears occupied an area of roughly 13.6 million acres, more than double the size of the recovery zone. The distribution of the NCDE grizzly bear population is estimated biannually. The estimated occupied range of the NCDE grizzly bear population during 2011 through 2020 was 67,652 square kilometers (16,717,173 acres), representing an increase of about 6 percent from the 2009-2018 estimate or an annual increase of about 3 percent (Costello and Roberts 2021).

- In part due to grizzly bear expansion into areas that had previously been unoccupied, the number of grizzly bear-human conflicts has generally increased. However, much of the recent grizzly bear mortality is primarily associated with conflicts arising from attractants on private lands rather than conflicts on public lands.

- Food Storage Orders are in effect throughout the NCDE recovery zone and several areas outside of the recovery zone on National Forest lands and Glacier National Park. These agencies have been successful at managing attractants on federal lands under the food storage orders.

- 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. 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 5.7 million acres, of which 1.7 million acres is wilderness and 962,000 acres is Glacier National Park, which contains highest quality grizzly bear habitat. Considering these lands only, nearly half of the NCDE is essentially roadless or free of motorized use (47 percent). Further, the Flathead National Forest, which makes up 40 percent of the NCDE recovery zone, currently contributes approximately 1.5 million acres of additional grizzly bear secure core area. The four other National Forests in the NCDE also provide additional substantial secure core areas.

- The majority of the NCDE is managed by the National Forest and National Park Service, whose access management outside of wilderness areas or otherwise protected area is directly based on IGBC Guidelines. The current access management conditions on Federal lands across the ecosystem have contributed towards the recovery of grizzly bears in the NCDE.

Factors related to the CYE Recovery Zone:

- The CYE is a smaller ecosystem that is still slowly recovering from being close to historical extirpation, particularly in the Cabinets portion of the ecosystem. The CYE has

low resiliency due to low numbers of grizzly bears, low fecundity, moderate inter-ecosystem connectivity, low genetic diversity, and moderate amounts of large, intact blocks of land.

- Based on known fates of radio-collared individuals and reproductive outputs, it is estimated that the population of grizzly bears in the CYE is currently increasing, with an annual growth rate of 1.9 percent between 1983 and 2021 (Kasworm et al. 2022a). This is a significant improvement from earlier trend calculations that indicated the population was declining, and now represents 15 years of an improving trend since 2006 (Kasworm et al. 2022a).

- A CYE population estimate derived from mark and recapture efforts estimated the U.S. population in 2012 at 48 to 50 individuals (Kendall et al. 2016). Using all methods (capture, collared bears, DNA, photos, credible observations), Kasworm et al. (2022a) detected a minimum of 45 individual grizzly bears alive in the CYE at some point during 2020, 18 grizzly bears in the Cabinets and 29 in the Yaak. Some of these detected individuals have died.

- A reasonable population estimate for the CYE, using the mid-point of 49 grizzly bears from Kendall et al. (2016) and rate of increase of 1.9 percent, is about 60 to 65 grizzly bears (Ibid.).

- Augmentation of grizzly bears from the NCDE into the CYE has been ongoing. Recent data suggests that the number of grizzly bears in the Cabinet portion of the CYE has increased (Kendall et al. 2016; Kasworm et al. 2022a), almost exclusively through the augmentation program and reproduction from those individuals (Kasworm et al. 2022a).

- While the current population estimate of about 60 to 65 grizzly bears in the CYE remains below the goal of a minimum population of 100 bears (U.S. Fish and Wildlife Service 1993), the population trend for the CYE has changed from declining to slightly increasing and successful augmentation and natural immigration has led to improved genetic diversity (Kasworm et al. 2022a).

- The probability that the CYE population is stable or increasing is 70 percent (Kasworm et al. 2022a). Improved adult and subadult female survival rates resulted in an improving population trend estimate since 2006 (Ibid.). We expect that over time, if the population trend and adult female survival rates remain high and continue to increase in the CYE and existing conservation measures are maintained, the population in this ecosystem will likely expand. Expanding population size will result in increased resiliency of the population to stressors, ensuring greater viability of the CYE population. Resiliency is expected to increase in the next 30 to 45-year timeframe (U.S. Fish and Wildlife Service 2022a).

- Maintaining or increasing current levels of genetic diversity in the CYE would help ensure genetic concerns do not become a threat in the future. Recent data indicate increasing movements by males and females and subsequent reproduction, resulting in limited, but increasing population connectivity, particularly in the Yaak portion of the CYE." (U.S. Fish and Wildlife Service 2022a).

- The recovery plan established a goal of zero human-caused mortality for the CYE until the minimum population reached approximately 100 bears. However, it also stated "In reality, this goal may not be realized because human bear conflicts are likely to occur at some level within the ecosystem." Therefore, even if the goal of zero mortality is not met, it is important to evaluate the recovery criteria (applicable to the recovery zone) to determine if progress towards recovery is occurring. Refer to the recovery plan for explicit recovery criteria (U.S. Fish and Wildlife Service 1993).

- For the period 2016 through 2021, demographic recovery criteria associated with unduplicated females and occupied BMUs have not been met in the CYE, but progress is being made towards meeting the criteria (Kasworm et al. 2022a). Occupancy and reproduction are slow processes that rely on multiple factors. Managing mortality is a key factor in assuring opportunities for female grizzly bears to expand their range and reproduce.

- For the period 2016 through 2021, demographic recovery criteria associated with total known, human-caused mortality and known, female human-caused mortality have been met. Using the minimum estimated population size (41), the total mortality limit is 1.6 bears per year and the female mortality limit is 0.5 female bears per year. The average annual human-caused mortality for 2016 through 2021 was 1 bear per year and 0.5 females per year. The mortality levels for total bears as well as female bears were less than or equal to the calculated mortality limits for 2016 through 2021 (Ibid.).

- Genetic connectivity between the CYE and other grizzly bear populations is important. Recent data indicate increasing movements by males and females and subsequent reproduction, resulting in limited, but increasing population connectivity, particularly in the Yaak portion of the CYE." (U.S. Fish and Wildlife Service 2022a)

- The Cabinet-Yaak recovery zone encompasses approximately 1.6 million acres (6,705 square kilometers), of which 44 percent are protected as designated wilderness or inventoried roadless areas. Blocks of contiguous habitat extend into Canada.

- Nearly 98 percent of the recovery zone is federally-managed land, including portions of the Kootenai, Idaho Panhandle, and Lolo National Forests, whose access management outside of wilderness areas or otherwise protected areas is directly based on IGBC Guidelines with the intent to improve conditions for grizzly bears.

- The Kootenai National Forest's access management standards that provide for large, intact blocks of land, are an example of the many current conservation measures in place in the CYE that was included in the future scenario analysis in the SSA (U.S. Fish and Wildlife Service 2022a).

- The Kootenai River bisects the CYE approximately in half, with the Cabinet Mountains to the south and the Yaak River drainage to the north, and may have limited movement between the two (Kasworm et al. 2022a). While movement was believed to be minimal, several movements into the Cabinet Mountains from the Yaak River and Selkirks have occurred since 2012 (Ibid.). Due to the short distance between these two populations, full

connectivity remains a management goal and evidence to date suggests progress towards that goal.

- The Tobacco BORZ and Salish DCA provide an opportunity for connectivity between the CYE and NCDE. Female grizzly bears with young have been observed in the Tobacco BORZ, indicating that some of females are able to find the resources needed to establish home ranges and survive and reproduce outside the recovery zone.

- A Food Storage Order is in effect throughout the CYE recovery zone and BORZ. Managing attractants on federal lands under the current food storage order has been successful.

- Montana Fish, Wildlife and Parks' bear specialist program and the Bear Ranger program in the CYE are expected to continue to work with the public to reduce risks to grizzly bears on private and public lands. In cooperation with other agencies, these programs have made notable strides toward an informed public and reduced the availability of attractants to grizzly bears on private and public lands.

The conclusion is focused on the NCDE and CYE because the remainder of the action area is within the BE where no known grizzly bear population occurs within or outside of the defined BE recovery zone. Because no female grizzly bears have been documented in the BE recovery zone, the BE is currently considered unoccupied as per the definition of a population of grizzly bears (two or more reproductive females or one female reproducing during two separate years) (U.S. Fish and Wildlife Service 2022a). While no individual grizzly bears have been documented within the BE recovery zone, solitary grizzly bears have been documented immediately surrounding it (Ibid.). Since the entire portion of the BE recovery zone that occurs on the Forest is within the Selway-Bitterroot Wilderness no adverse effects are expected associated with any of the activities conducted under the Forest Plan. No motorized routes occur within this portion of the BE recovery zone and it will continue to function as secure habitat for the foreseeable future.

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. Recovery zones are areas adequate for managing and promoting the recovery and survival of grizzly bear populations (U.S. Fish and Wildlife Service 1993). Areas within the recovery zones are managed to provide and conserve grizzly bear habitat. The recovery zones contain large portions of wilderness and in some cases national park lands, which are protected from the influence of many types of human uses occurring on lands elsewhere. Multiple use lands are managed with grizzly bear recovery as a primary factor. As anticipated in the Recovery Plan, grizzly bear populations have responded to these conditions; the recovery plan strategy has been successful and has resulted in growth of the grizzly bear populations. Based on the best available information, grizzly bears are slightly increasing, with expanding distribution and low mortality rates in some ecosystems (CYE, SE) and are robust, have stabilized, and have reached or are nearing recovery in other recovery zones (YGBE, NCDE). In addition, the grizzly bears have been expanding and continue to expand their existing range outside of the recovery zones, as evidenced by the verified records of grizzly bears in many portions of the action area including some recently verified occurrences in the BE. Such

expansion will increase opportunities for expanding population size and increased genetic connectivity between the ecosystems.

Grizzly bears outside the recovery zones probably experience a higher level of adverse impacts due to human development and management of land than do grizzly bears inside. As anticipated in the recovery plan, we expect more grizzly bears will inhabit the Forest in the future. We expect grizzly bears will occur outside of the recovery zones at lower densities than within the recovery zones as a result of suboptimal habitat conditions, which include higher motorized route densities, fewer areas of secure habitat, and more human presence. In our recent 5-Year Review, the Service states that the "effects of stressors in the areas between ecosystems would only impact individual bears and could not have any impacts at the level of a population or the entire entity" (U.S. Fish and Wildlife Service 2021).

Despite the growth of the human population and the increase in the number of grizzly bear-human conflicts and grizzly bear mortalities, the preponderance of evidence suggests an increasing number of grizzly bears in the NCDE recovery zone: a total population estimate of 1,114 grizzly bears for 2021 (U.S. Fish and Wildlife Service 2022), an estimated positive population trend of 2.3 percent annually (U.S. Fish and Wildlife Service 2022, Costello et al. 2016), and the current distribution of grizzly bears (U.S. Fish and Wildlife Service 2022, Costello and Roberts 2022, Costello et al. 2016.). Based on the best available information, the Service concludes that the status of the NCDE grizzly bear population is robust and is at or near recovery. In addition, the population trend for the CYE has changed from declining to slightly increasing and successful augmentation and natural immigration has led to improved genetic diversity (Kasworm et al. 2022a). It is estimated that the population of grizzly bears in the CYE is currently increasing, with an annual growth rate of 1.9 percent between 1983 and 2020 (Ibid.). Improved adult and subadult female survival rates have resulted in a significant improvement from earlier trend calculations that indicated the population was declining, and now represents an improving population trend estimate since 2006 (Ibid.). The probability that the CYE population is stable or increasing is 70 percent (Ibid.). We expect that over time, if the population trend and adult female survival rates remain high and continue to increase in the CYE and existing conservation measures are maintained, the population in this ecosystem will likely expand, increasing the resiliency of the population to stressors and ensuring greater viability of the CYE population. Resiliency is expected to increase in the next 30 to 45-year timeframe (U.S. Fish and Wildlife Service 2022a).

While the Forest Plan direction may result in some low level of non-lethal adverse effects to some of the individual female grizzly bears and/or their dependent offspring using the action area, considering the large size of the CYE and NCDE recovery zones, favorable land management within the recovery zones, the robust status of the NCDE grizzly bear population, the increasing population of the CYE, and the improved survival of grizzly bears in the CYE, adverse effects on grizzly bears as a result of implementing the Forest Plan would not have negative effects on the status of the NCDE and CYE grizzly bear populations. The management of grizzly bears within the recovery zones favors the needs of grizzly bears; these results signal successful federal land management related to grizzly bear recovery under the strategy detailed in the 1993 Recovery Plan. Therefore, we conclude that the continued implementation of the Forest Plan is not likely to reduce the numbers, distribution, or reproduction of grizzly bears in the action area and consequently in the listed lower 48 states listed entity.

We do not expect any effects to individual grizzly bears that do not have all or a portion of a home range within the action area (the Forest). We do not expect the Forest Plan to have any negative effects to individual grizzly bears or to grizzly bear populations outside of the NCDE, CYE, or BE. In other words, we do not expect the Forest Plan to negatively affect grizzly bears within or connectivity with the surrounding grizzly bear ecosystems (Yellowstone) nor the ecosystems further away (North Cascades, Selkirks). Because the Forest Plan would not reduce the reproduction, numbers, or distribution of grizzly bears throughout the NCDE, CYE, and BE, the Forest Plan would not have negative impacts at the level of the entire listed entity (the lower 48 states). Thus, we conclude that the Forest Plan is not likely to reduce the numbers, distribution, or reproduction of grizzly bears across their listed range. When considering this, along with the status of the overall grizzly bear population in the lower 48 states, we conclude that the level of adverse effects is not reasonably expected to reduce appreciably the likelihood of both the survival and recovery of the listed entity of grizzly bears as a whole. Accordingly, it is the Service's biological opinion that the effects of the Forest Plan on grizzly bears are not likely to jeopardize the continued existence of the listed entity of grizzly bears.

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 Act provided that such taking is in compliance with this Incidental Take Statement.

The Forest Plan is a framework programmatic action, i.e. it provides direction for future actions that may be authorized, funded, and/or carried out by the Forest and it does not in itself mandate or approve future implementation of activities on the Forest. For the purposes of an incidental take statement, a Federal action is a framework programmatic action if it approves a framework for the development of future action(s) that are authorized, funded, or carried out at a later time, and any take of a listed species would not occur unless and until those future action(s) are authorized, funded, or carried out and subject to further section 7 consultation. 50 C.F.R. § 402.02. For a framework programmatic action, an incidental take statement may be provided but is not required at the programmatic level; any incidental take resulting from any action subsequently authorized, funded, or carried out under the program that is not addressed below will be addressed in subsequent section 7 consultation, as appropriate.

For some activities implemented under the Forest Plan, the level of detail available is insufficient to identify with particularity all possible circumstances that may possibly involve the incidental take of listed species. Given the lack of specificity and information regarding future effects of

actions implemented under the Forest Plan, providing the amount or extent of take would be speculative and unlikely to provide an accurate and reliable trigger for reinitiation of consultation for some effects. Consequently, with the exception of incidental take related to grizzly bears as described below, other potential for incidental take that we are unable to anticipate at this time is deferred to future consultation on individual projects. Any incidental take resulting from subsequent actions that proceed under the Forest Plan will be subject to section 7 consultation, as appropriate. In addition, take that may occur due to illegal activities by private citizens within the action area is not exempted in this incidental take statement.

This 2023 biological opinion on the continued implementation of the Forest Plan has analyzed the effects to grizzly bears associated with the Forest Plan direction across the entire Forest and will supersede four biological opinions and incidental take statements that are associated with the existing Forest Plan, including the 2004 biological opinion on the Forest Plan and associated 2012 amended incidental take statement, the 2011 biological opinion and incidental take statement on the final access management strategy for the Swan subunit in the NCDE, the 2011 biological opinion and incidental take statement on the access amendment to the Forest Plan for the CYE, and the 2017 biological opinion and incidental take statement on the NCDE grizzly bear amendments. These previous consultations are summarized in the biological opinion above. While the direction under the Forest Plan did not change from the direction consulted on in these four biological opinions and associated incidental take statements, we are including the effects and any associated incidental take with those actions in this 2023 biological opinion and incidental take statement in order to consolidate the amount of ongoing biological opinions and capture all effects and incidental take associated with the continued implementation of the Forest Plan direction in one consultation using the current best available information and including the entire Forest as the action area.

The measures described below are non-discretionary and must be undertaken by the Forest 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 Forest has a continuing duty to regulate the activity that is covered by this incidental take statement. If the Forest (1) fails to assume and implement the terms and conditions or (2) fails to require an 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 Forest must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 C.F.R. § 402.14(i)(3)].

Amount or Extent of Take Anticipated

Motorized Access (non-winter)

Based on research detailed earlier in this biological opinion, the Service has defined harm of grizzly bears in terms of adverse habitat conditions caused by high motorized route densities, resulting in low amounts of secure habitat, which may displace individuals from key habitat to the extent that significant under-use of habitat by grizzly bears may occur. Using the best information on the effects of motorized access on grizzly bears, we conclude that existing high motorized route densities and associated low amounts of secure habitat in portions of the action area are likely to result in some level of adverse effects to some female grizzly bears and/or their dependent offspring at some point during the life of the Forest Plan, primarily those that attempt

to establish and maintain home ranges within the action area. Future permanent and/or temporary route construction and use, and/or temporary use of restricted routes may add to or increase the likelihood of such adverse effects. These adverse effects may result from potential displacement of grizzly bears from essential habitat. Displacement may result in significant under-use of key habitat when high amounts of motorized access exist on the landscape. The Service maintains that such under-use of otherwise suitable habitat within a grizzly bear's home range may constitute incidental take of individual female grizzly bears and/or their dependent offspring through "harm" as a result of significant habitat alteration that impairs breeding, feeding, and/or sheltering.

Portions of the action area have high levels of motorized routes while other portions have low levels of motorized routes or no motorized routes at all. With the exception of the subunits and BMUs within the NCDE and CYE recovery zones respectively, we have previously analyzed portions of the action area using only linear motorized route density or an estimate of low, medium, or high levels of motorized use. Although providing the linear route density provides a useful threshold to describe human-caused effects to grizzly bears based on existing literature and gives an idea of the amount of roads in the action area, motorized route density or acreage alone fails to represent how these routes occur on the landscape and fails to consider how road placement affects habitat patch size (Proctor et al. 2019). For example, portions of the GBAUs may have high route densities (even within the GBAUs with lower overall linear route densities) while other portions of the GBAUs may have low route densities or even no motorized routes (even within the GBAUs with higher overall linear route densities). For instance, even in a GBAU with overall low road density, there may be patches of high road density interspersed with patches of low road density or even unroaded areas. Secure habitat has been identified as one of the key issues related to effects of motorized access on grizzly bears and is important to the survival and reproductive success of grizzly bears. While secure habitat is directly tied to motorized routes, it more adequately represents the potential effects to grizzly bears related to motorized access as it provides a more accurate indication of the spatial patterns of motorized and non-motorized areas. Consequently, changes to the amount of secure habitat is an appropriate measure of potential effects to grizzly bears related to motorized access. For example, measurements of route density in situations of uniformly spaced roads, even at an otherwise acceptable route density, can provide very limited patches of secure habitat that are functionally useful for grizzly bears (Proctor et al. 2019). Similarly, larger patches of secure habitat may be available in areas with high road densities if roads are concentrated in specific areas. In other words, the key to limiting impacts of roads on bears is tied to availability, location, and distribution of secure habitat that is a function of not simply numeric density of motorized routes, but the spatial arrangement in which they occur. Accordingly, we have incorporated secure habitat into this analysis and incidental take statement.

As previously stated, in order to be conservative in favor of the grizzly bear when analyzing effects of motorized access, all existing, drivable routes are buffered when delineating secure habitat outside of the recovery zone, regardless of whether they are legally open or restricted to public travel and includes legally restricted routes that may not have a barrier such as a berm or gate restricting them (i.e. it is restricted or closed via MVUM and/or sign). It is generally assumed that bermed roads are not in drivable condition, but when there is uncertainty of whether berm construction was completed, roads were considered drivable and coded as such in the database. The purpose of making these assumptions is only for analyzing effects to grizzly bears and does not change the management direction on the Forest. These assumptions are

appropriate and necessary so as to not miss any potential effects to grizzly bears and give the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). This methodology acknowledges both that the Forest does not have standards limiting administrative use of roads outside of the recovery zones and that available data are less complete in this portion of the Forest in terms of the types and locations of closure devices and the condition of the road prism beyond the barrier. It is important to note that although this approach may result in a lower estimate of the existing amount of secure habitat, it assures that the impacts of motorized route use are not underestimated as a whole.

In addition, since the Forest lacks inventory information and has no management authority over non-Forest lands, a 500 meter buffer was placed around Forest land in those areas where Forest land is adjacent to non-Forest land ownerships. Buffering Forest land 500 meters from non-Forest Service land ownerships is a conservative approach when considering effects to grizzly bears and will capture any unknown or undisclosed cumulative effects that may result from non-Forest actions on non-Forest land that occur adjacent to Forest lands. For example, actions on adjacent non-Forest land could affect secure habitat on adjacent Forest lands by having impacts within 500 meters of secure habitat. Accordingly, the Forest lands within 500 meters of lands not administered by the Forest may not provide secure habitat due to the potential effects associated with motorized access on adjacent non-federal lands. While it is possible that Forest land within 500 meters may provide secure habitat, information as to activity on non-Forest land is often unknown or not disclosed and the Forest lacks management authority over non-Forest lands. As such, the amount of secure habitat on Forest land adjacent to non-Forest land could change at any time without the Forest's knowledge or authority. Therefore, to be conservative when analyzing effects to grizzly bears, in order to not miss any potential effects associated with motorized access on non-Forest lands, Forest land within 500 meters of non-Forest land is buffered out of the secure habitat metric for the Forest. Because of the long life of the Forest Plan, it is not possible to know everything that may occur on non-Forest land and because the Forest has no control on non-Forest lands, this buffer accounts for any cumulative effects to grizzly bears that may have occurred from actions on non-Forest lands. In other words, any potential unknown effects associated with non-Forest lands have already been incorporated into this analysis ahead of time. For example, if motorized access were to increase on non-Forest land adjacent to Forest land, potentially affecting grizzly bears in the action area associated with disturbance and/or displacement, the effects of such are already considered into the metrics of secure habitat that are measured for Forest lands. Thus, we would not miss any effects to secure habitat on Forest lands over time, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). Using this conservative approach does not result in significant effects to the grizzly bear population.

The Forest is expected to update the secure habitat metrics as they update their access data during site-specific project planning in order to more accurately portray what is existing on the ground at the time of this consultation. Routes that were existing on the Forest but unmapped due to errors or lack of information may or may not affect the Forest's estimate of the existing amount of secure habitat, depending on the location of the roads. It is expected that this type of adjustment to the baseline would reflect better data and mapping rather than representing actual changes on the ground. As the access database is updated, the improved information will better reflect the existing conditions related to secure habitat in the GBAUs.

The existing motorized access conditions within the Monture, Mor-Dun, North Scapegoat, South Scapegoat, and Rattlesnake subunits in the NCDE recovery zone are not expected to result in significant effects or incidental take of grizzly bears. The existing motorized access conditions within the Mission and Swan subunits in the NCDE recovery zone and BMU 22 in the CYE recovery zone are likely resulting in some level of ongoing significant effects to and incidental take of individual female grizzly bears and/or their dependent young.

The portion of the action area outside of the recovery zones includes areas designated as NCDE zone 1, which includes the Ninemile DCA, and NCDE zone 2 as well as areas outside of these designations. Outside of the recovery zones, the estimated amount of secure habitat ranges from a low of 2 percent of Forest land in the Middle Blackfoot GBAU to a high of 76 percent of Forest land in both the Fish Creek and Upper Rock GBAUs. Of all 30 GBAUs delineated on the Forest, six have less than 10 percent secure habitat on Forest land, seven have between 11 and 20 percent secure habitat on Forest land, seven have between 21 and 30 percent secure habitat on Forest land, four have between 31 and 40 percent secure habitat on Forest land, one has between 41 and 50 percent secure habitat on Forest land, two have between 51 and 60 percent secure habitat on Forest land, and three have greater than 60 percent secure habitat on Forest land. It is likely that portions of most of the GBAUs have existing conditions that may be resulting in some level of ongoing significant effects to and incidental take of grizzly bears if or when female grizzly bears are present.

The effects of the existing motorized access conditions throughout the action area, including the NCDE and CYE recovery zones, NCDE zones 1 and 2, and areas outside of these designations result in some level of ongoing affects, including some adverse effects, that will continue during the life of the Forest Plan. Ongoing displacement of grizzly bears may be occurring due to the potentially significant under-use of key habitat by female grizzly bears and/or their dependent offspring and may constitute incidental take of grizzly bears through “harm” as a result of significant habitat alteration that impairs breeding, feeding and/or sheltering.

Given the lack of forest plan direction requiring specific levels of secure habitat in the areas outside of the recovery zones, NCDE zone 1, and the Ninemile DCA, it's possible that projects may permanently reduce secure habitat or more likely, temporarily reduce the effectiveness of the existing secure habitat. However, reductions and/or effects to secure habitat will be limited in most GBAUs by Forest Plan MA allocations that limit or preclude road construction. Given the variation in individual projects, the potential effects of permanent and temporary route construction and use on secure habitat depend entirely on the location of the new route and the existing secure habitat polygons. For example, permanent and/or temporary routes could be constructed completely outside of secure habitat and outside of the 500 meter buffer in close proximity to existing routes and would have no effect on secure habitat. Other circumstances may include temporary or permanent route construction and use within 500 meters of secure habitat but not directly within secure habitat, affecting the edge of secure habitat. Finally, sometimes temporary or permanent roads are built directly within secure habitat; thus affecting or potentially splitting a secure habitat polygon. Depending on the circumstances of the new roads as described above, the new roads may or may not affect secure habitat.

The construction and use of permanent and/or temporary routes and/or temporary use of restricted routes for motorized access may increase the likelihood of displacement of grizzly bears in or near a project area. While not specifically proposed under the Forest Plan, permanent

and/or temporary route construction and use, and/or temporary use of restricted routes may occur on a project by project basis. Permanent routes may be used during the short-term for a project and then restricted with a barrier and placed in storage with the potential for future administrative use or may be used for the long-term and receive a substantive amount of use if kept in an open status. Temporary routes built or restricted routes temporarily used may be short-term in duration of use or may remain on the landscape for several years and receive a substantive amount of use. Depending on the site-specific project information (size, location, duration, etc.), effects associated with permanent and/or temporary route construction and use, or temporary use of restricted routes could range from minor disturbance and insignificant effects to displacement of grizzly bears that may result in adverse effects.

In sum, existing motorized access conditions in some areas and continued presence of these motorized routes under the Forest Plan, along with permanent and/or temporary route construction and use, and/or temporary use of restricted routes, may result in incidental take of some individual female grizzly bears and/or their dependent offspring attempting to establish or maintain home ranges in roaded areas at some point over the life of the Forest Plan. We anticipate that in a limited number of circumstances, site specific conditions would result in significant displacement of adult females and/or their dependent offspring from key seasonal habitat, impairing their ability to find adequate food resources, breed and raise young, and/or find shelter.

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.

As detailed in this biological opinion, we anticipate that existing motorized access conditions, permanent motorized route construction and use, temporary motorized route construction and use, and temporary use of restricted routes would affect only a very few adult females over the over the life of the Forest Plan because grizzly bears occur at low densities in the action area and numbers of females are expected to increase only slowly over time in much of the action area. Also, substantial increases in road densities are not expected. If subadult females move into portions of the action area further away from the recovery zone seeking to establish home ranges, they would be exposed to levels of roading that would factor into home range selection, and that level of roading is not likely to significantly increase. Therefore, the take we anticipate would be harm to only a very low number of female grizzly bears and/or their dependent offspring that may inhabit the action area now and into the future, over the life of the Forest Plan. We expect harm would be caused by significant under-use of key habitat in areas affected by high road densities to levels that result in decreased fitness and impaired reproductive potential. In other words, infrequently and in site-specific circumstances, an adult female grizzly bear wary of humans and human-generated disturbance may not breed at its potential frequency or may fail to complete gestation due to decreased fitness. As some adult females have proven that they are able to successfully reproduce and raise young in areas that have high motorized access conditions, we do not expect all adult female grizzly bears and/or their dependent offspring affected by less than optimal motorized access conditions to suffer impairment of breeding, feeding, and/or

sheltering, nor would we expect any female to experience permanent effects (lasting more than one reproductive cycle) as they would likely adapt. 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.

The effects of high route densities and associated low amounts of secure habitat on individual female grizzly bears and/or their dependent offspring are difficult to quantify in the short term and may be measurable only as long-term effects on the species' habitat and population levels. 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 and/or their dependent offspring impacted by high road densities. We lack specific information on the precise number of adult female grizzly bears and/or their dependent offspring that have home ranges encompassing all or portions of the action area.
2) Individual grizzly bears would react differently to the disturbance. Because some adult females have proven that they are able to successfully reproduce and raise young in areas that are worse than research benchmarks associated with motorized access, not all adult female bears and/or their dependent offspring that are exposed to disturbances from high road densities would be adversely impacted to the point of take. Low numbers of grizzly bears would likely decrease intra-specific competition for habitat, allowing more options for individuals to move within home ranges in many cases.
3) Some individual female grizzly bears and/or their dependent offspring that initially may be sensitive to disturbances may adjust to the routine disturbances generated by human activity over time.

Therefore, determining the precise amount of take, as defined by impaired reproductive potential (as affected by feeding and sheltering), is difficult. 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 female grizzly bears and/or their dependent offspring vary naturally due to environmental and physiological causes.
3) A reduction in "normal" reproductive success is not discernable in the wild.
4) The reasons a grizzly bear fails to breed and/or failure to complete gestation are not discernable in the wild.

According to Service regulations implementing the Act (50 C.F.R. § 402.14(i)(1)(i)) and 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, the Service uses a surrogate measure of take. The number of grizzly bears that use the action area is unknown but grizzly bears have been documented. However, female grizzly bears have yet to be verified within some portions of the action area. The mechanism of female grizzly bear dispersal makes it likely that only relatively few female grizzly bears would occupy much of the action area during the life of the Forest Plan. Therefore, for reasons explained above, the

Service anticipates that incidental take of adult female grizzly bears and/or their dependent offspring would be very low and would occur only infrequently over the life of the Forest Plan in the form of harm related to the displacement effects of existing motorized access, permanent and/or temporary road construction and use, and temporary use of restricted roads. As incidental take associated with motorized access is difficult to quantify, we will express incidental take as a change in habitat characteristics and conditions affecting grizzly bears, specifically secure habitat.

We do not anticipate that motorized access in all portions of the action area would result in incidental take as some areas may have relatively high amounts of secure habitat. We anticipate that the likelihood of incidental take of females would be highest in those areas with lower amounts of secure habitat, if females occupy them. We also do not anticipate that all permanent and/or temporary routes constructed and used, or temporary use of restricted routes in the action area would result in incidental take. This would depend on such things as grizzly bear use of an action area, location and length of the temporary road, and the duration it would be on the landscape, as well as the potential for female grizzly bear occurrence.

Surrogate 1

We expect some level of incidental take associated with the ongoing effects of the existing motorized access conditions within the action area. Our **first surrogate measures of incidental take of grizzly bears** will be represented by the habitat conditions resulting from the existing motorized access conditions on the Forest that may continue to result in some level of incidental take over the life of the Forest Plan. Within the NCDE recovery zone, research benchmarks for OMRD, TMRD, and secure core describe that adverse effects to grizzly bears are likely to occur when OMRD exceeds 1 mile per square mile in more than 19 percent of the subunit, TMRD exceeds 2 miles per square mile in more than 19 percent of the subunit, and secure core is not at least 68 percent of the subunit during the non-denning period. This road-density threshold, first identified by Mace et al. (1996) has been roughly observed by other researchers in multiple study areas (summarized in Proctor et al. 2019) as being a density beyond which adverse effects to female grizzly bears can occur. Within the CYE recovery zone, based on research by Wakkinen and Kasworm (1997), research benchmarks for OMRD, TMRD, and secure core describe that adverse effects to grizzly bears are likely to occur when OMRD exceeds 1 mile per square mile in more than 33 percent of the subunit, TMRD exceeds 2 miles per square mile in more than 26 percent of the subunit, and secure core is not at least 55 percent of the subunit during the non-denning period.

As described above, the existing motorized access conditions within the Mission and Swan subunits in the NCDE recovery zone and BMU 22 in the CYE recovery zone are likely resulting in some level of ongoing significant effects to and incidental take of grizzly bears. The habitat conditions of OMRD, TMRD, and secure core will represent the incidental take associated with existing motorized access conditions within the recovery zones. Also described above, the majority of the GBAUs delineated outside of the recovery zones have existing motorized access conditions that are likely resulting in some level of ongoing significant effects to and incidental take of grizzly bears. The Forest does not measure OMRD or TMRD in areas outside of the recovery zones. Because secure habitat provides a more accurate indication of the spatial mix of motorized routes, it more adequately represents the potential effects related to open and restricted motorized access as opposed to a linear route density. Thus, the habitat conditions associated

with the amount of secure habitat on the Forest will represent the incidental take associated with existing motorized access conditions within the GBAUs outside of the recovery zones. Tables 7 and 8 below display the **first surrogate measures of incidental take of grizzly bears** related to the ongoing effects associated with the existing motorized access conditions on the Forest.

Table 7. Existing motorized access conditions in the Mission and Swan Subunits of the NCDE recovery zone and BMU 22 of the CYE recovery zone

Subunit/BMU	OMRD	TMRD	Secure Core
Mission	25 %	50 %	37 %
Swan*	31 %	20 %	53 %
BMU 22	32 %	33%	55 %

*This includes an OMRD of 22 percent during the spring (as discussed above).

Table 8. Existing secure habitat within the action area outside of the NCDE recovery zone (U.S. Forest Service 2022).

GBAU	Estimated Percent of Forest Land Providing Secure Habitat
NCDE zone 1	
Clearwater	4 %
Cottonwood	11 %
Gold	14 %
Middle Blackfoot	2 %
North Missoula	68 %
Placid	3 %
Ninemile DCA	
Keystone	33 %
Mill North	4 %
Ninemile	29 %
Trout East	11 %
Outside of NCDE zone 1 and Ninemile DCA	
Dry Cold	51 %
Dry Eddy	41 %
Fish Creek	76 %
Little Thompson	11 %
Lower Rock	56 %
Lynch Creek-Clark Fork	13 %
Middle Thompson	26 %
Mill South	34 %
Miller	4 %
North Lolo	16 %
Pats Knob	34 %
Petty Creek	25 %
Prospect	26 %
St Regis North	25 %
St Regis South	23 %

South Lolo	26 %
Trout West	33 %
Upper Fishtrap	6 %
Upper Rock	76 %
Upper Thompson	15 %

The existing motorized access conditions were determined using the best available information. The Service recognizes that improved information may be documented and mapping and calculation errors can occur. If the Forest updates the motorized access metrics to better reflect existing conditions (no changes on the ground) or finds that it has new information or has made a mapping or calculation error in describing the existing condition and corrects the metrics, the Service does not expect any additional incidental take of grizzly bears related to those corrections because the changes would not reflect any actual changes on the ground. The intent of this incidental take statement is to capture the existing access conditions, including potential incidental take that may not be represented in the metrics described above due to potential errors or lack of information at the time of consultation. The Forest is expected to update the motorized access metrics as they update their motorized access data during site-specific project planning in order to more accurately portray what is on the ground at the time of this consultation.

As described in the biological opinion above and in surrogate measure 2 below, changes to secure habitat in the GBAUs may occur as a result of permanent route construction (affecting up to 1 percent of secure habitat in a given GBAU). Thus, secure habitat in the GBAUs represented in surrogate measure 1 above could decrease within any given GBAU by 1 percent and not exceed the amount of incidental take exempted. However, a site-specific consultation (likely a tiered consultation) will occur associated with such permanent construction. If the existing conditions become worse than what is displayed in Tables 7 and 8 above due to changes on the ground and no project-specific consultation occurred, then the level of incidental take we anticipate in our first surrogate measure of take would be exceeded and therefore the level of take exempted would be exceeded.

Surrogate 2

Permanent motorized route construction within the recovery zones is limited by standards. Since the NCDE subunits and CYE BMU 22 have standards to meet for OMRD, TMRD, and secure core, in order to construct permanent routes in many areas of the recovery zones, other roads would likely need to be decommissioned depending on location and other site-specific details in order to continue to meet the standards. In some portions of the recovery zones, permanent motorized route construction could occur and the subunit or BMU may continue to meet the standards. However, nothing specific has been proposed for analysis in this programmatic consultation on the Forest Plan. As such, potential effects related to permanent motorized route construction in the recovery zones was not analyzed in this biological opinion. Therefore, permanent motorized routes that would affect OMRD, TMRD, and secure core in the recovery zones are not considered in this incidental take statement.

Permanent motorized route construction within NCDE zone 1 and the Ninemile DCA are also limited by standards. Under NCDE-LNF Zone 1-STD-01, a net increase above the 2011 baseline density of roads (NCDE zone 1) and roads and trails (Ninemile DCA) open to public motorized use during the non-denning season would be precluded on Forest lands in NCDE zone 1, which

includes the Ninemile DCA. However, while open linear route density within NCDE zone 1 would be maintained, permanent motorized routes that are restricted from the public could be constructed and have the potential to affect secure habitat or open motorized routes could be decommissioned and new permanent motorized routes could be constructed within secure habitat, thus reducing secure habitat but maintaining the linear motorized route density.

While not specifically proposed under the Forest Plan, permanent motorized route construction and use in the GBAUs outside of the recovery zones may occur, typically associated with a site-specific project. Permanent routes may be used during the short-term for a project and then restricted with a barrier with the potential for future administrative use or may be used for the long-term and receive a substantive amount of use if kept in an open status. Based on the information provided by the Forest, a very small amount of permanent decrease of secure core was estimated and analyzed for the GBAUs. For the purposes of this consultation and incidental take statement, an amount of no more than one percent of the secure habitat within any given GBAU would be affected associated with the construction and use of permanent motorized routes. In sum, this estimated amount of no more than a total of one percent of secure habitat in any given GBAU could be permanently decreased over the life of the Forest Plan represents our **second surrogate measure of incidental take of grizzly bears** that we anticipate in regards to motorized access. Permanent changes could affect our first surrogate measure of take if new permanent route construction and use results in a net decrease in the amount of secure habitat post-project. Thus, motorized access conditions represented in surrogate measure 1 above could decrease within any given GBAU by 1 percent and not exceed the amount of incidental take exempted.

For future site-specific projects with permanent route construction that may affect more than 1 percent of a given GBAU, the effects of such will be analyzed during the site-specific project consultation as they would not fall under the level of effects analyzed or incidental take provided here. If secure habitat within any given GBAU is permanently reduced by more than a total of 1 percent as a result of permanent route construction and use then the level of incidental take we anticipate in our second surrogate measure of take for the area outside of the recovery zones would be exceeded and therefore the level of take exempted would be exceeded associated with this incidental take statement. Additional incidental may be exempted during that site-specific consultation.

Surrogate 3

Vegetation or other management actions often require the construction and use of temporary routes or temporary use of restricted routes for motorized access. While not specifically proposed under the Forest Plan, temporary route construction and use, and temporary use of restricted routes may occur on a project by project basis. Temporary routes constructed may be short-term in duration of use or may remain on the landscape for several years and receive a substantive amount of use. If it is determined that the construction and use of temporary routes or temporary use of restricted routes for a specific action will not adversely affect grizzly bears then we would not expect any incidental take associated with that action and this incidental take statement would not apply. For those scenarios where temporary routes may result in adverse effects to grizzly bears, some level of incidental take of grizzly bears may occur as described below. As such, we do expect some level of incidental take associated with the construction and use of temporary routes and/or temporary use of restricted routes within the action area over the

life of the Forest Plan. Our third surrogate measure of incidental take of grizzly bears will be represented by the habitat conditions resulting from temporary changes to the existing motorized access conditions on the Forest that may result in some level of additional incidental take over the life of the Forest Plan. Temporary changes do not affect our first surrogate measure of take as temporary use would not result in a net increase in the amount of permanent routes or a net decrease in secure habitat post-project. Thus, motorized access would return to the pre-project levels, lessening the effects on grizzly bears over time.

Within the NCDE recovery zone, Forest Plan Standard NCDE-STD-AR-03 allows for temporary increases in OMRD and TMRD for projects, not to exceed a 5 percent temporary increase in OMRD and not to exceed a 3 percent temporary increase in TMRD, both calculated over a 10-year running average. NCDE-STD-AR-03 also allows temporary changes in secure core during project activities with a limit of 2 percent temporary decrease in secure core calculated over a 10-year running average. NCDE-STD-AR-04 specifies that temporary public motorized use of restricted roads is not authorized within secure core. The Monture, North Scapegoat, South Scapegoat, and Rattlesnake Subunits will remain above the research benchmarks of 19/19/68 even if temporary effects to OMRD, TMRD and secure core occur under projects associated with NCDE-STD-AR-03 and will not result in adverse effects or incidental take. The Mor-Dun subunit currently meets the research benchmark values for OMRD, TMRD, and secure core. TMRD and secure core effectiveness would remain above the research benchmark of 19 percent and 68 percent, respectively, even with temporary effects associated with NCDE-STD-AR-03. However, OMRD may temporarily exceed the benchmarks if increases allowed under standard NCDE-STD-AR-03 are invoked to allow for project activities in the Mor-Dun subunit, potentially resulting in some level of short-term adverse effects and incidental take. Temporary effects for projects allowed under NCDE-STD-AR-03 within the Mission and Swan subunits could result in temporary increases in OMRD and/or TMRD and/or temporary decreases in the effectiveness of secure core that further exceed (are worse than) the benchmarks. Since some level of ongoing adverse effects are likely already occurring as a result of the existing, baseline motorized access conditions in these subunits, the temporary increases allowed under NCDE-STD-AR-03 may result in additional adverse effects and incidental take to grizzly bears that may be using these subunits.

Forest Plan standard NCDE-STD-AR-01 allows administrative use of roads that are closed to public motorized use within the recovery zone, provided that doing so does not exceed either 6 trips (3 round trips) per week or 1 thirty-day unlimited use period during the non-denning season. Exceptions to this standard are allowed for emergency situations. 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 motorized public use in these areas will not last longer than 30 days during one non-denning season, and will only occur outside the spring and fall bear hunting seasons. Further, public motorized use would not be permitted within secure core.

Guidelines are also provided for the NCDE recovery zone to minimize the potential effects of temporary project implementation within the recovery zone. Temporary project implementation within the recovery zone should not exceed 5 years (NCDE-GDL-AR-01). Further, guideline NCDE-GDL-AR-02 states that secure core should be restored to pre-project levels within 1 year of completion of a project. Although 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. While the Forest may deviate from guidelines with an approved exception, it is not known at this time what exceptions may be used. Thus, these guidelines, as written, will be used as part of our surrogate measure of take. If these guidelines are not met for any given site-specific action, site-specific consultation may be necessary depending on the site-specific information and effects.

Within the CYE recovery zone, Forest Plan direction allows the Forest to temporarily affect underlying core area (i.e., any core habitat that is affected by the subject road and its buffer) within a BMU once per 10-year time frame, and not to exceed 1 bear year, for the sole purpose of completing road decommissioning/stabilization activities on existing closed or barriered roads in core area habitat. Subsequent needs to re-enter individual core areas within a BMU more frequently than once per decade for the purposes of road decommissioning shall be handled on a case-by-case basis. The effects of additional entries will be analyzed pursuant to such project level consultation. In addition, temporary administrative use shall not exceed 60 vehicle round trips per active bear year per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30). If the number of trips exceeds 60 trips per active bear year in the Cabinet-Yaak ecosystem, then that road would be considered "open" for analysis and reporting purposes. Likewise, if the number of trips exceeds the allowable ecosystem-specific seasonal (spring, summer, and fall) vehicle round trips per road, then that road would be considered "open" for analysis and reporting purposes. Since some level of ongoing adverse effects may already occurring as a result of the existing, baseline motorized access conditions in BMU 22, these temporary effects may result in additional adverse effects and incidental take to female grizzly bears and/or their dependent offspring that may be using the BMU.

Outside of the recovery zones, the Forest estimated that the construction and use of temporary routes and/or temporary use of restricted routes may temporarily decrease the effectiveness of secure habitat by no more than 5 percent in any individual GBAU at any given period of time. If projects span more than one GBAU, a project may not affect secure habitat by more than 5 percent in each of the GBAUs. Since some level of ongoing adverse effects are likely already occurring as a result of the existing, baseline motorized access conditions in most GBAUs on the Forest, temporary effects to secure habitat may result in additional adverse effects and incidental take to female grizzly bears and/or their dependent offspring that may be using the action area.

In sum, the estimated amounts of OMRD, TMRD, and/or secure core in the recovery zones or secure habitat outside the recovery zone affected by temporary route construction and use and/or temporary restricted route use represents our **third surrogate measure of incidental take of grizzly bears** that we anticipate in regards to motorized access.

- If projects within the NCDE recovery zone: temporarily result in more than 19 percent OMRD, 19 percent TMRD, and/or less than 68 percent secure core **and** temporarily increase OMRD by more than 5 percent, temporarily increase TMRD by more than 3 percent, or temporarily decrease secure core by more than 2 percent using a 10-year running average; result in administrative use on roads with public restrictions exceeding either 6 trips (3 round trips) per week or 1 thirty-day unlimited use period during the non-denning season; exceed 5 years; and/or access conditions (i.e., OMRD, TMRD, secure core) are not restored to pre-project conditions within 1 year of project completion then

the level of incidental take we anticipate in our third surrogate measure of take for the NCDE recovery zone would be exceeded and therefore the level of take exempted would be exceeded.

- If the core area within BMU 22 in the CYE recovery zone is affected for completing road decommissioning/stabilization activities more than once per 10-year timeframe and/or exceeds 1 bear year, and/or temporary administrative use exceeds 60 vehicle round trips per active bear year per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30) then the level of incidental take we anticipate in our third surrogate measure of take for the CYE recovery zone would be exceeded and therefore the level of take exempted would be exceeded.
- If more than 5 percent of the secure habitat is affected in any individual GBAU outside of the recovery zones at any given time as a result of temporary route construction and use and/or temporary use of restricted routes then the level of incidental take we anticipate in our third surrogate measure of take for the area outside of the recovery zones would be exceeded and therefore the level of take exempted would be exceeded.

Winter Motorized Use

In addition to non-winter motorized access, the Service anticipates that over-snow vehicle use (snowmobile) that may occur under the Forest Plan may incidentally result in some very low level of take of female grizzly bears with offspring during den emergence. Over-snow vehicle use would be restricted on large proportions of denning and spring habitat on the Forest and thousands of acres of denning and spring habitat would be legally unavailable to over-snow vehicle use in the broader area where grizzly bears may occur. Where grizzly bears and over-snow vehicle use do generally overlap, there is still some spatial separation. However, the potential of over-snow vehicle use adversely impacting an individual female grizzly bear with offspring and resulting in some level of incidental take cannot be eliminated. The incidental take is expected to be in the form of harm or harassment to individual female grizzly bears and/or dependent offspring caused by premature den emergence or premature displacement from the den site area.

The best information available indicates that snowmobile impacts to grizzly bears emerging from dens was a higher concern than impacts to denning bears (Graves and Ream 2001). The Service concludes that snowmobile-generated disturbance to grizzly bears in dens during the deep of winter is not likely to rise to the level causing significant impairment of breeding or sheltering to the point of injury or death. In spring, disturbance from snowmobiles to grizzly bears in dens may cause premature den emergence. Based on naturally earlier den emergence of male bears and females without young, their independence and mobility, the Service does not anticipate the effects of disturbance caused by over-snow vehicle use would be adverse to male grizzly bears or female grizzly bears without cubs.

However, late season over-snow vehicle use may result in some level of incident take of female grizzly bears with offspring by causing a female grizzly bear with cubs to prematurely leave a den in the spring or cause a recently emerged female with cubs to be prematurely displaced from her den or den site, potentially resulting in decreased fitness of the adult female bear and/or decreased fitness or abandonment of her dependent offspring. If the dependent offspring attempt

to follow their mother from a den site prior to their gaining some mobility, they may suffer from decreased fitness or death.

The incidental take of female grizzly bears or their cubs may be indicated by:

- a female grizzly bear's premature den emergence (earlier than documented for this ecosystem, based on gender, age and reproductive status) following exposure to over-snow vehicle use;
- the location of one or more cubs abandoned by their mother near or in a den in an area of over-snow vehicle use;
- the location of one or more cubs accompanying a female prior to the normal (earlier than documented for this ecosystem) den emergence period in an area of over-snow vehicle use; or
- a female bear that emerges in poor fitness in early spring (when other bears are in good condition) in an area of over-snow vehicle use.

However, the Service anticipates such incidental take of grizzly bears will be difficult to detect for the following reasons:

- grizzly bears are difficult to detect in the wild;
- grizzly bears are wide-ranging and their denning habitat is remote, largely wilderness and difficult to access;
- grizzly bear den sites cannot be precisely located over large portions of the denning habitat;
- grizzly bear den sites are often not re-used, so even known den sites cannot be monitored over time for indications of early abandonment, injury or mortality;
- close monitoring of den sites may actually increase the risk of abandonment;
- the resorption of or loss of fetuses, or loss of cubs born in inaccessible underground den sites cannot be quantified; and
- decreased fitness, loss of young, and premature den emergence may all be related to a variety of other factors; establishing a causal relationship between over-snow vehicle use and these effects would be difficult.

Discovery of an individual grizzly bear injury or mortality attributed to over-snow vehicle use is very unlikely. The exact number of grizzly bears in the population is unknown, den site locations are generally unknown, and the exact levels, frequency, and location of over-snow vehicle use is not known. The number of females with cubs, pregnant females, den emergence dates, and over-snow vehicle use varies each year due to a number of factors, including snow conditions. All of these variables are difficult to monitor or census. The Service concludes that the level of take of grizzly bears that would result from over-snow vehicle use would be very low based on the best available grizzly bear population information, the amount of protected and unprotected denning habitat available on the Forest, the characteristics of most grizzly bear den sites, expert opinion of grizzly bear researchers, and the best available information on grizzly bear denning.

As described above, 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. In instances where incidental take is difficult to quantify, the Service uses a surrogate measure of take. The number of grizzly bears that use the

action area is unknown but grizzly bears have been documented. For reasons explained above, the Service anticipates that incidental take of adult female grizzly bears would be very low and would occur only infrequently over the life of the Forest Plan in the form of harm related to the effects of existing winter motorized use. As incidental take associated with winter motorized use is difficult to quantify, we will express incidental take as an amount of habitat used by grizzly bears that may be affected by winter motorized use, specifically grizzly bear denning habitat.

Surrogate 4

As described above, in instances where incidental take is difficult to quantify, the Service uses a surrogate measure of take. The surrogate measure for the number of grizzly bears harmed and/or harassed will be quantified using acres of potential grizzly bear denning habitat open to over-snow vehicle use beyond April 1.

Despite the Forest covering a large area of grizzly bear habitat, the only known denning habitat occurs within the NCDE. Grizzly bear denning has not been recorded in the portion of the BE or CYE portions of the Forest. Grizzly bears do den in the CYE to the north of the Forest but not currently within the portion located on the Forest (BMU22). As the bear population continues to grow and expand, grizzly bears could den within areas not previously known to have active grizzly bear denning. Although incidental take may not be occurring until such time a female with cubs dens in any given area, due to the long duration of the Forest Plan, we will address all areas of the Forest.

Snow conditions within portions of the action area are often suitable for over-snow vehicle use well beyond April 1, the date grizzly bears generally begin emerging from their dens. This is true especially in the higher elevations within the recovery zone. However, under the existing Forest Plan, areas with extended winter motorized use seasons (after April 1) do occur. Late season over-snow vehicle use is not restricted in all portions of the action area and in some portions of the action area winter motorized use would extend beyond the April 1 grizzly bear spring emergence period. Over-snow vehicle use can occur on the Forest from December 1 to March 15, March 31, April 15 or April 30 depending on the location. In addition, some areas on the Forest do not have a closed season. In the NCDE recovery zone within modeled grizzly bear denning habitat, Forest Plan standard NCDE-STD-AR-08 allows no net increase in the percentage of area or miles of routes designated for motorized over-snow vehicle use on Forest lands during the den emergence time period. Outside of the NCDE, the Forest Plan does not restrict motorized over-snow vehicle use during the den emergence period outside the areas with year-round closure as shown on the OSVUM. As such, the Forest does have some areas where over-snow vehicle use may occur during the den emergence period. The Forest estimated the acres of overlap between denning habitat and over-snow vehicle use.

In total, about 29 miles and approximately 205,100 acres of grizzly bear denning habitat are open to over-snow vehicle use during the during the den emergence period beyond March 31. About 24 miles occur within the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA and 5 miles occur outside of this area. No trails for over-snow vehicle use are identified in the OSVUM for the CYE and no trails or roads for over-snow vehicle use are used within the BE. Of the 205,100 acres of denning habitat that are open to cross-country over-snow vehicle use during the den emergence period, about 58,200 acres occur in the NCDE recovery zone, NCDE zone 1, and the Ninemile DCA, about 22,800 acres occur within the CYE Recovery Zone in

BMU22, and about 124,100 acres occur within the areas outside the NCDE, CYE, and BE recovery zones, NCDE zone 1, and the Ninemile DCA. The portion of the BE Recovery Zone on the Forest is entirely within an area closed to over-snow vehicle use, thus no acres of over-snow vehicle use overlaps potential denning habitat. While these acres are open during the den emergence period, from a qualitative review, not all of these acres of cross-country over-snow vehicle use are available for such due to either the ruggedness of the terrain or logistical limitations (e.g., fuel). In addition, some drier and lower elevation areas may not be available to over-snow vehicle use after March 31st due to a lack of snow.

Thus, in total, approximately 29 miles and 205,100 acres of grizzly bear denning habitat overlap late season over-snow vehicle use beyond April 1. These acres of grizzly bear denning habitat represent the **fourth surrogate measure of the incidental take of grizzly bears** that we anticipate as a result of the Forest Plan. If the amount of grizzly bear denning habitat open to authorized over-snow vehicle use after April 1 exceeds the miles and acres provided in the fourth surrogate measure of take, then the level of incidental take we anticipate in our fourth surrogate measure of take would be exceeded and therefore the level of take exempted would be exceeded.

Summary

In summary, over the life of the Forest Plan, if the following scenarios occur then the level of incidental take we anticipate associated with motorized access would be exceeded and therefore the level of take exempted would be exceeded. Under CFR 402.16 (1), in any of these scenarios, reinitiation of consultation would be required unless the effects of such impacts are analyzed under a site-specific consultation:

1) Permanent increases in the existing motorized access conditions within the recovery zones occur over the amounts displayed in Table 7 in our first surrogate measure of take above and are not associated with a mapping or calculation error;
2) Permanent decreases of more than 1 percent of the secure habitat within the GBAUs occur over the amounts displayed in portions of Table 8 in our first surrogate measure of take above and described in our second surrogate measure of take above and are not associated with a mapping or calculation error;
3) Projects within the NCDE recovery zone result in temporary increases in OMRD by more than 5 percent, temporary increases in TMRD by more than 3 percent, or temporary decreases in secure core by more than 2 percent and result in a subunit having more than 19 percent OMRD, 19 percent TMRD, and/or less than 68 percent secure core; result in administrative use on roads with public restrictions exceeding either 6 trips (3 round trips) per week or 1 thirty-day unlimited use period during the non-denning season; exceed 5 years; and/or access conditions (i.e., OMRD, TMRD, secure core) are not restored to pre-project conditions within 1 year of project completion;
4) If the core area within BMU 22 in the CYE recovery zone is affected for completing road decommissioning/stabilization activities more than once per 10-year timeframe and/or exceeds 1 bear year, and/or temporary administrative use exceeds 60 vehicle round trips per active bear year per road, apportioned as follows: ≤18 round trips in spring (April 1 through June15); ≤23 round trips in summer (June 16 through September 15); and ≤19 round trips in fall (September 16 through November 30);
5) Temporary road construction and use and/or temporary restricted road use outside of the recovery zones impacts more than 5 percent of secure habitat in an individual GBAU at any given time; and/or

6) Authorized late season winter motorized use overlaps more than 29 miles and 205,100 acres of grizzly bear denning habitat overlap late season over-snow vehicle use beyond April 1.

In addition, as described in the effects section above, we don't expect adverse effects (and correspondingly we don't expect incidental take) related to human-grizzly bear conflicts associated with food and attractants at this time. However, as the Regional food and attractant storage order expires after 5 years, it is possible (although unlikely) that the Forest is without a food and attractant storage order at some point during the life of the Forest Plan. As previously stated, we reasonably expect (based on past history) that additional food and attractant storage orders that apply Forest-wide will continue to be issued, reissued, or extended for life of the Forest Plan. It is unlikely that a food and attractant storage order would not be in effect at any given time during the life of the Forest Plan. However, if at any given time, a food and attractant storage order is not in effect during the life of the Forest Plan, additional effects to grizzly bears may result that have not been previously analyzed and reinitiation of consultation on the Forest Plan may be necessary.

Effect of the take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. The amount of incidental take described above is low. Much of the action area occurs outside of the recovery zones. As detailed in this opinion, and according to the 1993 recovery plan (U.S. Fish and Wildlife Service 1993), most lands outside of the recovery zones are not considered biologically essential to recovery of the species. Further, considering the grizzly bear recovery strategies and the size, status, and distribution of the NCDE and CYE grizzly bear populations, incidental take of grizzly bears in the action area would not affect the recovery of the listed entity of grizzly bears. The Forest Plan implements several measures that would sufficiently minimize impacts to grizzly bears.

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. The Service believes that the Forest Plan reduces the potential for and minimizes the effect of incidental take of grizzly bears. By managing for grizzly bears within the NCDE and CYE recovery zones and NCDE zone 1, including the Ninemile DCA (following standards in the NCDE grizzly bear amendment and CYE access management direction), the amount of incidental take of grizzly bears will be reduced. The following reasonable and prudent measures are appropriate to further minimize the impacts of incidental take of grizzly bears.

1. Reduce the potential for displacement of grizzly bears related to motorized access.

Terms and Conditions

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

To implement Reasonable and Prudent Measure #1:

1. Within the Swan subunit in the NCDE, maintain OMRD during the spring (from April 1 through June 30) at 22 percent throughout the life of the Forest Plan. This is accomplished via the gated seasonal closure on the northern section of National Forest Service Route 4370. The closure extends from the junction with Highway 83 in T19NR16WS36 to the Clearwater Lake Trailhead in T19NR15WS19.

2. When implementing future road restriction decisions to restrict motorized access, the Forest shall use devices or methods recognized by the IGBC as effective closure devices and methods (IGBC 1998).

3. The Forest shall update the secure habitat data within the GBAUs outside of the recovery zones as they obtain new information and/or develop site-specific projects.

4. The duration for those actions associated with site-specific projects that result in temporary changes in the effectiveness of secure habitat within GBAUs outside of the recovery zones associated with site-specific temporary route construction and use, and/or temporary use of restricted routes shall be limited to the following: within NCDE zone 1 and the Ninemile DCA, new temporary routes that affect secure habitat shall not be on the landscape for more than 5 years from the start of construction and the temporary use of restricted routes that affect secure habitat should occur for more than 5 years; and within the area outside of NCDE zone 1 and the Ninemile DCA, new temporary routes that affect secure habitat shall not be on the landscape for more than 10 years from the start of construction and the temporary use of restricted routes that affect secure habitat should not occur for more than 10 years.

Reporting requirements

To demonstrate that the Forest Plan is adequately reducing the potential for and minimizing the effect of any incidental take that may result, the Forest shall complete a report with the information listed below and submit it to the Service's Montana Field Office biennially by June 1 for the preceding calendar year for the life of the Forest Plan. The report shall include:

1. In relation to the first and second surrogate measures of incidental take of grizzly bears and term and condition 3, provide an up-to-date record of the existing, ongoing access conditions including OMRD, TMRD, and secure core for the subunits within the recovery zone and secure habitat for the GBAUs outside of the recovery zone. Provide rationale for any changes that occur from the metrics displayed in the first and second surrogate measures of incidental take to differentiate if the changes are related to updates associated with no changes on the ground (based on new information, mapping or calculation errors, etc.) as described in the first surrogate

measure or updates associated with new permanent route construction as described in the second surrogate measure. In addition, report the existing conditions along with any updates to the baseline at the time of site-specific section 7 project consultations.

2. In relation to the third surrogate measure of incidental take of grizzly bears and term and condition 4, provide an up-to-date record of:

    a. the amount of OMRD, TMRD, and secure core affected by temporary projects and the duration of temporary project implementation within the recovery zones;
    b. the percent of secure habitat temporarily affected within the GBAUs outside the recovery zones from new temporary route construction and use, or temporary use of restricted routes and the duration that new temporary routes are on the landscape and/or the duration restricted routes were used for site-specific projects.

3. In relation to the fourth surrogate measure of incidental take of grizzly bears, provide an up-to-date record of any changes in the amount of grizzly bear denning habitat that overlaps late season over-snow vehicle use beyond April 1.

4. To gauge the validity of our assumptions that (1) illegal motorized access would most likely result in temporary effects to grizzly bears and (2) when illegal motorized access is observed or when user-created roads become apparent the Forest corrects the situation as soon as they are able, provide an up-to-date record of known illegal motorized access that occurred during the preceding two calendar years and how the Forest responded. Include information such as (but not limited to): the location of illegal motorized access, the type of barrier breached, how the barrier was breached, the date the Forest became aware of the illegal motorized access, how the Forest responded to the illegal motorized access, and the date the Forest carried out its response.

Closing Statement

The Service is unable to precisely quantify the number of grizzly bears that will be incidentally taken as a result of the Forest Plan. Therefore, we use surrogate measures for the amount of incidental take we anticipate based on habitat characteristics and/or conditions affecting grizzly bears, specifically secure habitat (non-winter motorized access) and denning habitat (winter motorized access). We use the existing levels of motorized access management, effects from permanent route construction in the GBAUs, and effects from temporary route construction and use, and temporary use of restricted routes as our first, second, and third surrogate measures of incidental take of grizzly bears related to motorized access management. We use the amount of grizzly bear denning habitat that overlaps late-season winter motorized use as our fourth surrogate measure of incidental take of grizzly bears.

Reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of take occurring exceeds that anticipated in this incidental take statement, such incidental take represents new information requiring reinitiation of consultation and review of the incidental take statement. The Forest must immediately

provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

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) responsibility for the species.

1. Continue to manage access on the Forest to achieve lower route densities. By managing motorized access, several grizzly bear management objectives could be met including: (1) minimizing human interaction and potential grizzly bear mortality; (2) minimizing displacement from important habitats; (3) minimizing habituation to humans; and (4) providing relatively secure habitat where energetic requirements can be met (Interagency Grizzly Bear Committee 1998). Additionally, lower route densities would also benefit other wildlife and public resources.

2. Motorized access management is only one of several factors influencing grizzly bear habitat and grizzly bear security. The presence of attractants is a major factor leading to the food conditioning and habituation, and the eventual direct mortality or management removal of grizzly bears. The Service supports the Forest's continued efforts to manage food storage. Management of garbage, food and livestock feed storage, to prevent access to bears, benefits grizzly bears as well as black bears and other carnivores. Human/carnivore interactions would also be reduced, leading to a public safety benefit.

3. Grizzly bears concentrate in certain areas during specific time periods to take advantage of concentrated food sources or because the area provides a high seasonal food value due to diversity in vegetation and plant phenology (e.g., important spring for fall range). Where grizzly bear use is known or likely to occur and where practicable, delay disturbing activities during the spring in spring habitats to minimize displacement of grizzly bears.

REINITIATION NOTICE

This concludes consultation on the effects of the continued implementation of the Forest Plan on grizzly bears. As provided in 50 C.F.R. § 402.16, reinitiation of consultation is required and shall be requested by the federal agency or by the Service where discretionary federal involvement or control over the action has been retained or is authorized by law and: (1) if the amount or extent of taking specified in the incidental take statement is exceeded; (2) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not

considered in the biological opinion or written concurrence; or (4) if a new species is listed or critical habitat designated that may be affected by the identified action.

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