United States Department of the Interior

FISH AND WILDLIFE SERVICE
Montana Ecological Services Office
585 Shephard Way, Suite 1
Helena, Montana 59601

In Reply Refer To:
File: M19 Helena-Lewis and Clark National Forest (F)
Project Code 2025-0085491 Helena-Lewis and Clark Forest Plan

April 23, 2025

Emily Platt, Forest Supervisor
Helena-Lewis and Clark National Forest
2880 Skyway Drive
Helena, Montana 59602

Dear Ms. Platt:

The U.S. Fish and Wildlife Service (Service) has reviewed your April 2, 2025, updated biological assessment regarding reinitiation of consultation on the effects of the Helena-Lewis and Clark 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 2025 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.). The attached 2025 biological opinion on the effects of the 2021 Forest Plan on grizzly bears supersedes the previous 2022 revised biological opinion on the Forest Plan on the effects of the 2021 Forest Plan on grizzly bears.

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: 2025.04.23 15:03:25 -06'00'

for Amity Bass,
Field Office Supervisor

ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

BIOLOGICAL OPINION

on the

Effects of the Helena-Lewis and Clark National Forest 2021 Forest Plan on Grizzly Bears

Agency:	U.S. Department of Agriculture Forest Service Helena-Lewis and Clark National Forest Helena, Montana
Consultation Conducted by:	U.S. Fish and Wildlife Service Montana Field Office Helena, Montana
Date Issued:	April 23, 2025

Table of Contents

INTRODUCTION

This biological opinion was prepared by the U.S. Fish and Wildlife Service (Service) and analyzes the effects of the 2021 Forest Plan (Forest Plan) for the Helena-Lewis and Clark National Forest (Forest) on grizzly bears (*Ursus arctos horribilis*). On August 3, 2023, the District Court of Montana remanded the 2022 Revised Biological Opinion to the Service as it relates to grizzly bears. The Forest has reinitiated consultation to address issues identified by the court and to provide updated analysis of the potential effects of the 2021 Forest Plan on the grizzly bear. The Service first received a biological assessment on October 23, 2024, and subsequently received a final updated biological assessment on April 2, 2025. Upon review of the 2025 biological assessment and additional information, this 2025 biological opinion on the effects of the 2021 Forest Plan on grizzly bears supersedes the previous 2022 revised biological opinion on the Forest Plan on the effects of the 2021 Forest Plan on grizzly bears.

Section 7(b)(3)(A) of the Endangered Species Act of 1973, as amended (Act) requires that the Secretary of 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.

As applicable, 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

Reinitiation of informal consultation on the Forest Plan began between the Forest and the Service in 2023. On August 3, 2023, the District Court of Montana remanded to the Service the 2022 Revised Biological Opinion as it relates to grizzly bears. The Forest Service is reinitiating consultation to address issues identified by the court and to provide updated analysis of the potential effects of the Forest Plan on the threatened grizzly bear. The Forest continued informal consultation with the Service on reinitiation of consultation on the Forest Plan through 2024 and initiated formal consultation in October of 2024. Ongoing consultation continued and the Service received the final biological assessment and request for consultation on the effects of the Forest Plan on October 23, 2024. An updated biological assessment, reflecting new information and additional analysis, was issued by the Forest on April 2, 2025, and supersedes the October biological assessment (U.S. Forest Service 2025). The biological assessment is incorporated

here by reference and not all information and analyses have been repeated in this document but they have been relied upon. The Forest Plan has been through previous consultation processes. Pages 15 through 16 and Appendix B of the biological assessment display a thorough history of consultation between the Forest and the Service (*Ibid.*). Further consultation has continued through email, meetings, and phone conversations with Forest staff. We continued to receive information regarding this consultation through April 15, 2025.

Upon review of the biological assessment and additional information, the Service has prepared a new biological opinion for the Forest Plan that supersedes the previous 2022 revised biological opinion on the Forest Plan, 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 2021 Forest Plan. The Forest Plan is the land use planning level guidance document for the Forest, providing direction for project and activity decision making. The Forest Plan provides an integrated plan for land and resource management, which articulates desired conditions, goals, objectives, standards, guidelines, and suitability of lands. For specific information and a description of the Forest Plan components, refer to pages 9 through 15 of the terrestrial biological assessment (U.S. Forest Service 2025). 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 2021 Forest Plan, will be addressed in subsequent section 7 consultations, as appropriate. Types of activities subsequently authorized, funded, or carried out under the 2021 Forest Plan that may affect listed species and/or designated critical habitat are described in the biological assessment prepared for the 2021 Forest Plan, which is hereby incorporated by reference (U.S. Forest Service 2025).

For the analysis below, it is important to provide the definitions for standards and guidelines that occur within the 2021 Forest Plan. A standard (STD) is a mandatory constraint on project and activity decision-making, established to help achieve or maintain one or more desired conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements (*ibid*.). Standards must be met and cannot be deviated from. A guideline (GDL) is a constraint on project and activity decision-making that allows for departure from its terms, so long as the purpose of the guideline is met. Guidelines are established to help achieve or maintain one or more desired conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements (*ibid*.). The 2012 planning rule allows the Forest to deviate from guidelines so long as they meet the purpose of the guidelines. However, since it is not known at this time what other scenarios may be used to meet the purpose of the guidelines within the 2021 Forest Plan, these guidelines, as written, will be used for the effects analysis. If the purposes of the guidelines are met in a different way than as written, the potential effects of such might not be addressed in this biological opinion and site-specific consultation may be necessary depending on the site-specific information and effects.

The life of the Forest Plan serves as the temporal bounds for this analysis. The Forest Plan is expected to guide management and decisions on the Forest for approximately 15 years after it was completed (2021). As the Forest Plan decision was issued in late 2021, this analysis uses until the end of 2036 to disclose anticipated effects to grizzly bear and its habitat. Amendments or revisions of the Forest Plan before this date may trigger additional consultation for this species.

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 2021a), the species status assessment (SSA) for grizzly bears (U.S. Fish and Wildlife Service 2022), the grizzly bear recovery program 2023 annual report (U.S. Fish and Wildlife Service 2024), 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 2023 annual report (Costello et al. 2024), the Greater Yellowstone Ecosystem (GYE) conservation strategy (Yellowstone Ecosystem Subcommittee 2024), the Yellowstone Grizzly Bear Investigations 2023 (van Manen et al. 2024), the Cabinet-Yaak (CYE) Grizzly Bear Recovery Area 2023 Research and Monitoring Progress Report (Kasworm et al. 2024a), 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 2023 Research and Monitoring Progress Report (Kasworm et al. 2024b). 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, including the Bitterroot Ecosystem (BE). No known populations occur in the BE or 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 the historical range (U.S. Fish and Wildlife Service 2022). The estimated population size and distribution in both the GYE (1,030 individuals in the DMA) and NCDE (1,163 individuals) have more than doubled since listing (van Manen et al. 2024, U.S. Fish and Wildlife Service 2022, 2024). All recovery criteria were met in both the GYE and NCDE for 2023 (U.S. Fish and Wildlife Service 2024) 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 2.7 percent and the SE increasing with an annual growth rate of 2.6 percent (Kasworm et al. 2024a, Kasworm et al. 2024b). The probability that the CYE population is stable or increasing is 77 percent and the probability that the SE population is stable or increasing is 80 percent (Kasworm et al. 2024a, Kasworm et al. 2024b). The total mortality and female mortality targets for the 2018 through 2023 period were not met for the CYE. The number of unduplicated females with cubs and BMU distribution criteria have

not been met for the CYE (U.S. Fish and Wildlife Service 2024, Kasworm et al. 2024a). For the period 2018 through 2023, the BMU distribution criteria and the total and female mortality criteria were met for the SE but the number of unduplicated females with cubs was not met (Kasworm et al. 2024b, U.S. Fish and Wildlife Service 2024). Although no known population occurs within the BE, multiple verified sightings have occurred in in areas immediately surrounding the BE recovery zone (U.S. Fish and Wildlife Service 2024). 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 (U.S. Fish and Wildlife Service 2022).

Analysis of the Species Likely to be Affected

The biological assessment determined that the 2021 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

The action area for the analysis of effects of the Forest Plan includes the approximately 2,800,000 acres of Forest land within the administrative boundaries of the Forest. The action area also includes slightly more than 30,000 acres of Beaverhead-Deerlodge National Forest that is administered by the Helena-Lewis and Clark National Forest as well as slightly more than 2,000 acres of Forest lands in isolated parcels outside of the administrative boundaries. 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 includes portions of 17 counties and is managed as 8 ranger districts including the Rocky Mountain, Lincoln, Helena, Townsend, White Sulphur Springs, Belt Creek, Judith, and Musselshell Ranger Districts.

The Forest straddles the continental divide and includes several island mountain ranges. Because of its diversity and extent, and because the island mountain ranges include unique ecological and social context, the action area is divided into 10 geographic areas (GAs). Some plan components in the Forest Plan are unique to individual GAs. Figure 1 and Table 2 in the terrestrial biological assessment display the GAs spatially and provide the acreages by ownership (U.S. Forest Service 2025).

A portion of the action area occurs within the NCDE recovery zone. Grizzly bear subunits have been delineated within the recovery zone, which approximate an average annual female grizzly bear home range size and are used as static analysis units for site-specific actions in order to consistently analyze the effects to grizzly bears over space and time. In order to facilitate a consistent effects analysis approach for grizzly bears throughout the Forest outside of the recovery zone, the Forest further divided the GAs into grizzly bear analysis units (GBAUs). GBAUs were delineated by using hydrologic boundaries that were adjusted (generally combined all or in part) based on average female home range size, topography, range of habitat types, range of elevations, and presence of private lands (U.S. Forest Service 2025). GBAUs approximate an average annual female grizzly bear home range size and are used as static analysis units for site-specific actions in order to consistently analyze effects to wide-ranging grizzly bears over space and time. Subunits in the recovery zone and GBAUs outside of the recovery zone do not represent actual grizzly bear home ranges or imply that occupancy or occurrence by grizzly bears is expected or required. Home range size varies in relation to food availability, weather conditions, and interactions with other bears. In addition, individual bears may extend their range seasonally from one year to the next.

Status of the Species within the Action Area

The action area is located in portions of the NCDE recovery zone, and NCDE zones 1, 2, and 3. The Rocky Mountain Range GA and the northern half of the Upper Blackfoot GA are within the recovery zone. The southern half of the Upper Blackfoot GA (158, 047 acres) and 325 acres in the Divide GA are within NCDE zone 1. A portion of the Upper Blackfoot GA (1,017 acres), along with the remainder of the Divide GA, and all of the Elkhorns GA and the Big Belts GA are located within NCDE zone 2. The Little Belts GA is located within NCDE zone 3. Grizzly bears may be present throughout most of the Forest, with the exception of the Crazies and Castles GAs and the portion of the Big Belts GA that lies south of U.S. Highway 12.

While the number of grizzly bears using the action area is unknown, the likelihood of occurrence is expected to be high within the NCDE recovery zone and NCDE zone 1. Grizzly bear numbers are likely lower within NCDE zone 2, but grizzly bears may be present within most portions of NCDE zone 2, especially in those areas west of Interstate 15. At this time, numbers are likely low to very low within NCDE zone 2 east of Interstate 15 and NCDE zone 3, where 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 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 motorized access management, food and attractant management and developed sites, livestock management, vegetation and fire management, and energy and mineral development. Existing conditions and management related to these factors are summarized below. General impacts of these factors will be discussed in more detail in the '*Effects of the Action'* section below. Outside of these key areas identified below, other federally authorized activities have occurred on the Forest that could potentially have affected grizzly bears. These activities are past or ongoing and are part of the current baseline habitat conditions reflected in this section. The biological assessment provides thorough information on the existing condition related to the following factors that are only summarized below and is incorporated by reference (U.S. Forest Service 2025). Further, many objectives, goals, and standards of the Forest Plan are relevant to grizzly bears. While some are mentioned throughout this document not all have been copied over into this document but are included within the biological assessment and have been considered for this analysis on the Forest Plan.

Motorized Access

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. Management of motorized access is effective in minimizing the effects of motorized access on grizzly bears (Proctor 2019).

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. Within the NCDE recovery zone, the Forest manages 16 subunits.

The existing motorized access conditions for the recovery zone portion of the action area are displayed in Table 1 by subunit. Table 1 includes the most recent data from the 2021 NCDE Motorized Access Monitoring Report (U.S. Forest Service 2025). Information in Table 1 includes all lands within the subunits, per the reporting methodology and requirements established in the NCDE conservation strategy (NCDE Subcommittee 2020) and the 2021 Forest Plan. The information includes minor changes from values displayed in the 2022 Biological opinion on the 2021 Forest Plan. The changes represent updates to the baseline as described in the 2021 Forest Plan. Changes in values shown for all but the Falls Creek Subunit resulted from changes in land ownership on the Blackfeet Indian Reservation and/or corrections and updates to the road data layer. No changes to road management occurred in any of those subunits. Changes to values in the Falls Creek subunit reflect two land exchanges, one of which brought land into

federal ownership and changed road designations on that land from private to public. No changes occurred in road management in the affected subunit. The subunits in the Rocky Mountain Range GA (all subunits except Alice Creek, Arrastra Mountain, and Red Mountain) are not subject to any existing or anticipated decisions that will change motorized access route density or secure core as represented in Table 1. Implementation of the Blackfoot Non-Winter Travel Plan in the Alice Creek, Arrastra Mountain, and Red Mountain has not yet been fully implemented but is considered as baseline under section 7. However, to more accurately report the existing condition on-the-ground (as the Blackfoot Non-Winter Travel Plan has not yet been fully implemented) Table 1 below displays the on-the-ground condition at this time, which will improve slightly over time upon completion of the Blackfoot Non-Winter Travel Plan.

Table 1. Existing OMRD, TMRD, and Secure Core within the NCDE recovery zone portion of the action area (U.S. Forest Service 2025).

Subunit[1]	OMRD[2]	TMRD[3]	Secure Core[4]
Badger*	0	0	72
Heart Butte*	1	0	59
Two Medicine*	2	1	76
Birch*	1	0	92
Teton*	11	5	72
Falls Creek*	1	0	84
Scapegoat*	5	1	78
Lick Rock	0	0	100
Roule Biggs	0	0	100
South Fork Willow	14	4	81
West Fork Beaver	17	5	78
Deep Creek*	10	3	67
Pine Butte*	8	2	64
Alice Creek*	11	13	73
Arrastra Mountain	15	17	76
Red Mountain	18	18	70

[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, excluding acreage of large lakes and small private lands.

Within the recovery zone, research benchmarks for open motorized route density (OMRD), total motorized route density (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. These motorized route metrics, 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 metric beyond which adverse effects to female grizzly bears can occur. Table 1 displays that all of the subunits meet these conditions related to OMRD and TMRD. Three of the subunits have less than 68 percent functioning as secure core (Heart Butte, Deep Creek, and Pine Butte). However, these subunits are 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 amount of motorized

access that occurs on Forest lands is very low in these three subunits and the ongoing effects from motorized access associated with the Forest would be insignificant within these subunits. As all other subunits are better than the research benchmarks for OMRD, TMRD, and Secure Core, the ongoing effects associated with the existing motorized access conditions within the recovery zone would be insignificant. In other words, motorized access management on the Forest within the portion of the action area in the NCDE recovery zone is not likely resulting in adverse impacts to grizzly bears.

The 2021 Forest Plan incorporates management criteria from the NCDE grizzly bear conservation strategy (previously known as the NCDE grizzly bear amendments). In general, the criteria 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. Some exceptions under certain conditions do exist, as detailed in the 2021 Forest Plan and conservation strategy. For example, the 2021 Forest Plan allows 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 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 conservation strategy (*Ibid.*), which is incorporated by reference.

The 2021 Forest Plan requires that open motorized route density on the Forest's portion of NCDE zone 1, measured as linear miles over the entire area (referred to as "linear motorized route density"), does not to increase above the 2011 baseline unless adjusted through consultation. The 2021 Forest Plan does not require motorized access management in NCDE zones 2 and 3.

Table 9 of the biological assessment provides information on the existing calculated linear motorized route density in NCDE zone 1 since the original 2011 baseline was identified in the NCDE Conservation Strategy. This is also the time in which implementation of the Blackfoot Non-Winter Travel Plan has been ongoing. The original baseline linear motorized route density for Forest routes from the 2011 NCDE Grizzly Bear Conservation Strategy was 1.6 miles per square mile. The 2015 and 2017 NCDE motorized access monitoring reports displayed the linear motorized route density for Forest routes as 1.2 miles per square mile. The 2017 biological opinion on the grizzly bear amendment to the Forest Plan displayed the linear motorized route density for Forest routes as 1.3 miles per square mile. The 2019 and 2021 NCDE motorized access monitoring reports displayed the linear motorized route density for Forest routes as 1.0 mile per square mile.

The linear motorized route densities displayed for the Forest's portion of NCDE zone 1 differ for several reasons (U.S. Forest Service 2025). First, they reflect actual changes on-the-ground as implementation of the Blackfoot Non-Winter Travel Plan progresses. Second,the motorized route information database (INFRA) is incomplete, as noted in the biological assessment for the 2021 Forest Plan (Ibid.). For the purposes of linear motorized route density analyses, biologists

and analysts may use various methods to determine whether certain roads that are lacking formal data are open or effectively closed. Those methods may include such things as field validation, use of remote imagery, staff knowledge, etc., and may vary depending on timing of analysis and availability of information sources. Where appropriate, road status determinations made during project-level analyses are entered into the INFRA database. Not all determinations are appropriate for entry into INFRA, however, as some may require further validation. Nevertheless, biologists and analysts use the best information available at the time each analysis is completed. The Forest is engaged in an ongoing process to update the INFRA database and improve availability of the information required for linear motorized route density analyses. It is important to note that the requirement that the linear motorized route density is not to increase above the 2011 baseline has been met and the conditions are better than the 2011 baseline conditions.

Providing the linear route density 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 motorized route density provides a useful threshold to describe human-caused effects to grizzly bears based on existing literature, route density 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.

As such, we have included an analysis of secure habitat for the GBAUS in order to more accurately portray the potential effects to grizzly bears than a simple linear route density does. 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 security 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 road density in situations of uniformly spaced roads, even at an otherwise acceptable road 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. Studies have shown that female grizzly bears selected for, and survived better in, areas with greater secure habitat (review in Proctor et al. 2019, Mace et al. 1996, Wakkinen and

Kasworm 1997, Gibeau et al. 2002, Schwartz et al. 2010). Accordingly, we have incorporated secure habitat into this analysis.

Several methods exist for defining secure habitat relative to distances from roads 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 used for long-distance connectivity.

Within the action area, secure core within the recovery zone 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 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'. Whereas areas more than 500 meters from any motorized route that are located outside of the recovery zone are defined as 'secure habitat'.

Table 11 and Table 12 in the biological assessment display the amount of secure habitat for each GBAU on the Forest (U.S. Forest Service 2025). Table 11 in the biological assessment displays the amount of secure habitat when calculated using 2,500-acres as a minimum patch size and Table 12 in the biological assessment displays the amount of secure habitat when calculated using a patch size greater than or equal to one acre (Ibid.). Although larger, less fragmented patches of secure habitat are likely the ideal for a grizzly bear, and better support daily use, small patches of secure habitat may afford a grizzly bear valuable space to avoid the effects of motorized roads and to move through or find valuable habitat in the area. For example, although researchers did document greater use in the largest patch sizes in the Selkirk Ecosystem and Cabinet-Yaak Ecosystem, they did not detect a minimum size of secure habitat that grizzly bears would utilize (Wakkinen and Kasworm 1997). Small patches of secure habitat may be valuable for providing areas free of disturbance to rest, providing areas of connectivity across roaded landscapes, or for providing patches of seasonally important habitats, which may be limited due to proximity to human settlement (see Regional Terrestrial Consultation Team meeting notes with grizzly bear researchers February 13, 2023 (Ibid.). Including both metrics allows for an overall look at the secure habitat conditions on the Forest outside of the recovery zone. However, all secure habitat calculated using a patch size greater than or equal to one acre will be used as the metric presented below and used throughout the effects analysis as this is the most conservative approach to identify secure habitat and to not miss any effects to secure habitat that is not included in the 2,500-acre patches.

The existing amount of modeled secure habitat within NCDE zones 1, 2, and 3 is displayed in Table 2 by GBAU, rounded to the nearest whole number. To be conservative in favor of the grizzly bear when analyzing effects of motorized access, all existing routes are buffered, regardless of whether they are legally open or restricted to public travel, when delineating secure habitat outside of the recovery zone. As such, the estimates of secure habitat displayed in Table 2 below are in most cases underestimates of actual secure habitat that exists on the ground because an unknown number of routes that are physically impassable to motor vehicle use have not been updated within the access database and thus, were excluded from secure habitat polygons. It is important to note that although this approach may result in a 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 and National Marine Fisheries 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 motorized 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. Motorized routes that were existing on the Forest but not included in the metrics 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 rather than representing actual changes on the ground or result in additional impacts to grizzly bears. As the motorized 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. Since secure habitat was likely underestimated, it is likely that updates to the amount of secure habitat in GBAUs would either not change or would increase.

In addition, since the Forest lacks inventory information and has no management authority over non-Forest lands, a 500-meter buffer was placed on 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 impacts to grizzly bears and will capture any unknown or undisclosed impacts 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 impacts 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 impacts to grizzly bears, in order to not miss any potential impacts 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 impacts to grizzly bears that may have occurred from actions on non-Forest lands. In other words, any potential unknown impacts 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 impacts of such are already considered into the metrics of secure habitat that are measured for Forest lands. Thus, we would not miss any impacts to secure habitat on Forest lands over time, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1998). Using this conservative approach does not result in significant impacts to the grizzly bear population.

Motorized routes densities outside the recovery zones 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 within the recovery zones. Modeled secure habitat using a patch size greater than or equal to one acre is displayed in Table 2. Information related to secure habitat incorporates updates to data resulting from project-level analyses that have occurred since the previous consultation on the 2021 Forest Plan, per the terms and conditions included in the previous 2022 revised biological opinion (U.S. Forest Service 2025).

Table 2. Estimated existing secure habitat within the GBAUs (U.S. Forest Service 2025).

GBAU	GBAU Total Acres	Total Acres of Forest Lands in GBAU (percent of GBAU)	Acres of Forest Land in Secure Habitat (patch size greater than or equal to one acre)	Percent of Forest Land in GBAU in Secure Habitat
Dalton Mountain	85,574	82,214 (96%)	31,707	39%
Humbug	72,797	66,919 (92%)	21,704	32%
Boulder River BDNF	33,523	31,565 (94%)	10,641	34%
Casey Peak	68,180	60,450 (89%)	33,398	55%
Crow Creek	73,514	70,637 (96%)	33,527	47%
Lazyman	77,205	64,497 (84%)	16,120	25%
North Divide	81,728	72,256 (88%)	18,831	26%
Spotted Dog	74,672	66,733 (89%)	24,192	36%
Middle Big Belts	83,704	70,743 (85%)	28,112	40%
North Big Belts	215,830	171,800 (80%)	83,631	49%
South Big Belts	126,333	67,125 (53%)	23,960	36%
Dry Wolf	79,470	74,285 (93%)	28,216	38%
Elephant	205,008	199,719 (97%)	62,933	32%
Pilgram	83,785	73,215 (87%)	36,204	49%
Middle Fork Judith	112,816	110,600 (98%)	67,519	61%
Sheep Creek	169,900	127,728 (75%)	18,895	15%
Tenderfoot-Smith	130,059	114,525 (88%)	57,158	50%
Upper Belt Creek	117,740	103,755 (88%)	35,083	34%
Highwoods	44,466	42,288 (95%)	17,368	41%
Castles	79,916	69,711 (87%)	16,790	24%
Crazies HLC	70,092	57,665 (82%)	24,003	42%
Snowies	122,132	118,151 (97%)	79,942	63%

The amount of secure habitat varies greatly among GBAUs with a range from a low of 15 percent to a high of 63 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 other portions of a GBAU. Despite low amounts of secure habitat within some GBAUs, grizzly bears are still expanding across the Forest. 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 impacts 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 impacts would be expected until such time that females began using the area.

Undetermined routes include old roads used for past land management activities that still remain on the landscape and user-created roads that have generally been developed without agency authorization, environmental analysis, or public involvement. Accordingly, undetermined routes are not considered an open route and are not part of the Forest's road system. Public motorized use is confined to routes identified on the Forest's motor vehicle use maps, which do not include undetermined routes. In many cases, undetermined routes have existed for many years, and thus are part of the environmental baseline from which grizzly bears have been experiencing effects. Thus, while documenting undetermined routes offer a more accurate representation of the conditions on the ground, it does not necessarily represent new effects to grizzly bears.

The disposition of undetermined routes is generally determined through travel planning. During those efforts, some undetermined routes are designated as part of the National Forest road or trail system while the remaining ones are generally slated for some type of decommissioning. Some undetermined routes are left on the landscape because they have been naturally reclaimed and no longer cause resource impacts. It can be several years before all of the undetermined routes have been decommissioned or grown in. Travel planning efforts may not identify all of the undetermined routes in a travel plan area, or new undetermined routes may have been created or found since the completion of the respective travel planning process. The dispositions of such undetermined routes are generally addressed through subsequent project decisions. At times, some of these undetermined routes are used for site-specific project activities. The use and subsequent dispositions of such routes would be part of the site-specific project action and associated site-specific analysis. Undetermined routes that are discovered may also be addressed on their own if they present imminent resource concerns.

Relative to the grizzly bear secure habitat discussed above, not all of the undetermined routes that occur on the Forest reside in the Forest's corporate road database (INFRA), which was used to determine secure habitat for the original biological assessment for the 2021 Forest Plan biological assessment and supplement. Since then, secure habitat has been updated through site-specific analyses. These updates, where they occur, are reflected in the baseline. This updated information reflects updated route information, including known undetermined routes not previously identified, if applicable.

The action area includes several designations, such as congressionally-designated wilderness areas, wilderness study act areas, inventoried roadless areas, conservation management area, and recommended wilderness areas, 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. Approximately 56 percent of the recovery zone portion of the action area is within designated wilderness. Seven subunits are entirely within designated wilderness, inventoried roadless area, conservation management area, or a combination of these. Table 14 in the biological assessment displays the amount of designated wilderness, wilderness study areas, and inventoried roadless areas by GBAU outside of the recovery zone (U.S. Forest Service 2025).

A private entity's non-compliance with the Forest's motorized access management direction is an illegal, unauthorized activity. Unauthorized motorized access can and does occur on the Forest and occurs when motorized vehicles are used in areas where motorized access is not permitted. Such use occurs via unauthorized motorized use of gated roads; unauthorized motorized use of bermed, barriered, decommissioned, and undetermined routes that are closed to motorized use; unauthorized motorized use of impassable routes that are not authorized for motorized use; or unauthorized motorized use of land that is not authorized for any motorized use (i.e. user-created routes, cross-country travel). While use of the Forest via motorized access in areas unauthorized for such use may occur within the action area (past and ongoing), such unauthorized use is not considered a Forest action. The term "action" for Section 7 consultation is defined in regulation (50 CFR 402.02) and 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, 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 or unauthorized activities are not the result of a federal action and therefore not analyzed under effects of the action, but their impacts and influence are considered for describing the environmental baseline.

Unauthorized motorized access is a fluctuating stressor. We cannot predict the exact time and location where unauthorized motorized access occurs. We have considered the impacts of unauthorized motorized access on grizzly bears to the best of our ability despite the uncertainty, as described below.

Law enforcement data for the 10-year period from 2014 through 2024 revealed approximately 611 unauthorized motorized use violations across the Forest (see tables 8 and 13 in the biological assessment; U.S. Forest Service 2025). Despite the appearance of high numbers of unauthorized motorized use, that use is spread out over ten years and across large geographic areas. Of the 611 violations, approximately one third (215) occurred during the denning season, when grizzly bears are generally not disturbed. Further, 297 of the 611 violations were related to unauthorized cross-country motorized travel. Cross-country unauthorized motorized use is associated with temporary and intermittent off-road driving in areas that do not have roads, such as meadows. Often, no type of barrier could prevent this activity other than communication with the public with a sign and/or a ticket, as the areas are open grasslands or shrublands. Installing a sign to inform the public driving into an opening or a meadow is often an effective form of enforcement, in addition to writing citations, as most people are not knowingly violating travel restrictions.

Table 8 of the biological assessment shows unauthorized motorized use for the portion of the NCDE recovery zone that occurs on the Forest based on law enforcement data. Most of the violations in the recovery zone were associated with unauthorized motorized use of closed roads. Except for 2015, these violations were not chronic or repeated in the areas where they occurred. In 2015, all violations occurred between January and March which overlaps with the grizzly bear denning season. Overall, more than half of the total violations in the NCDE recovery zone

occurred during the denning season. Seven subunits on the Forest are entirely within designated wilderness, inventoried roadless area, conservation management area, or combinations of those. Three additional subunits in the Upper Blackfoot GA (Arrastra, Red Mountain, and Alice Creek) have more than half their area in one or more of the above categories. The two subunits on the Rocky Mountain Range GA (Badger and Two Medicine) also have more than half of Forest lands within one of those categories. Unauthorized motorized use is unlikely to occur in these areas given their roadless designations and overall lack of accessibility into these areas.

Table 13 of the biological assessment displays unauthorized motorized use for the remainder of the Forest in NCDE zones 1, 2, and 3 as well as the Snowies, which occur outside of the NCDE zones. Law enforcement data show 8 total unauthorized motorized use violations, with 2 of these being related to cross-country use. No violations within NCDE zone 1 occurred during the denning season. NCDE Zones 2 and 3 comprise the majority of the motorized violations, with several recurring within and/or across years. Cross country unauthorized motorized use represents a large percentage of the unauthorized motorized use, particularly in Zones 2, 3, and the Snowies (39 percent, 69 percent, and 50 percent respectively). IGBC approved barriers, fences, or other barricades to control motorized use can be inadequate due to the existing topography (flat and open) and lack of vegetation. In other words, no type of barrier could prevent this activity other than communication with the public with a sign and/or a ticket, as the areas are open grasslands or shrublands.

It is important to note that citations for unauthorized access and cross-country travel are not an accurate measure of the total amount of unauthorized motorized use and associated impacts to grizzly bears because unauthorized motorized access may happen more or less often than the citations suggest, the number of citations may not correlate with the repeated unauthorized use in the same area, and the extent (duration and intensity) of the unauthorized access is unknown. Grizzly bears may or may not be present during instances of unauthorized motorized access, so impacts based on the number of citations is not possible to quantify. However, the fact that citations were issued is indicative that some unauthorized motorized use occurs within the action area.

The Forest has previously had some chronic violations in the past. These violations have primarily occurred in areas that are more open such as the north end of Big Belts or in areas where violators can skirt gates, including a few locations in the Strawberry Butte area of the Elkhorn Mountains. In those situations, the Forest has built fence or has placed boulders out from the gate as far as is needed to cut off the opportunity to skirt the gate. In some scenarios, the Forest has bolstered their surveillance. Most incidents have been isolated and short term.

Project-level surveys also included evidence of unauthorized use: 10 occurrences of unauthorized use in the Wood Duck project (out of 156 routes surveyed) and 26 occurrences of unauthorized use in the Coyote Divide project (out of about 550 routes surveyed). Several occurrences of unauthorized use in the Coyote Divide project area were corrected through route decommissioning or by constructing barriers to block access adjacent to breached gates.

It is possible other areas where unauthorized motorized access has occurred may be discovered during the life of this document. In general, “chronic” use is evident when the Forest receives multiple reports or it is visually evident that unauthorized access occurs regularly (tire tracks, looks like a road any public user could follow, etc.). The Forest addresses unauthorized use,

especially in areas of recurring violations. Corrective actions include signing the area with a clear notice that motorized use is prohibited, replacing broken locks, adding physical closure devices, constructing fences on either side of an existing barrier or at the location of a cross-country trespass, decommissioning routes or other actions. It is not possible to identify areas where one-time cross-country travel occurred and no visible evidence exists of the unauthorized motorized travel. Moreover, the Forest typically (but not always; e.g. signage) use closure devices or methods recognized by the IGBC (IGBC 1998)) as effective to restrict motorized access (i.e. berms, gates). Accordingly, the intent of using IGBC recognized closure devices is to implement a route closure device that is intended to restrict motorized access. It is not the intent or purpose of the Forest to implement route closure devices that are meant to be ineffective. No closure device can be 100 percent effective because at any given time a Forest user could illegally breach a closure device, even those recognized by the IGBC as an effective method in restricting motorized access. However, allowing for unauthorized motorized access is not the intent of the Forest's action of implementing the road restriction.

The unauthorized motorized access situations in the action area are typical of what would be expected for a National Forest in Montana. While closure devices such as berms, barriers, and gates are intended to restrict motorized access, the Forest and Service both recognize that unauthorized use does occur. Even with ongoing efforts, some individuals may access unauthorized areas of the Forest via motorized vehicles. The Forest's efforts, as described, minimize areas of chronic and frequent unauthorized motorized use.

To evaluate the potential impacts to grizzly bears from the sporadic, inconsistent unauthorized motorized use, we evaluated the best available scientific information regarding the impacts of motorized use on grizzly bear behavior and habitat use. In the 1993 Recovery Plan, the Fish and Wildlife Service stated that "unpredictable, random road use, the kind of use that may occur with administrative use of closed roads, may be even more disturbing to bears that have a negative association with roads. In this way, learned avoidance behavior can persist for several generations of bears before they again utilize habitat associated with closed roads" (U.S. Fish and Wildlife Service 1993). While this hypothesis (based in part on preliminary research) suggested that even sporadic use may affect bears, more recent scientific studies indicate that the density of motorized routes, the level of use of motorized routes, and the amount of secure habitat should also be considered. Many grizzly bears may be more tolerant of low-use roads and some bears' responses to roads may be more nuanced than the 1993 Recovery Plan suggested. Sporadic road use may not necessarily lead to multi-generational avoidance, or avoidance at all, if intensity is low. In addition, not all grizzly bears are affected in the same way by motorized access. 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. As such, the expected short-term, temporary unauthorized motorized access is not likely to significantly affect grizzly bears using the area of unauthorized motorized use. Further, as grizzly bear home ranges are very large, the likelihood of a grizzly bear being in the area of unauthorized motorized access when the unauthorized use occurs would be very low.

Because all routes (whether open or restricted) are considered in the same manner for calculating secure habitat for grizzly bears, unauthorized motorized use of restricted routes does not affect secure habitat as such routes do not occur within secure habitat. This also includes routes that are restricted by a sign and routes that are to be restricted under the Forest's Travel Plans but the Travel Plans have not been fully implemented yet. In other words, these routes could receive unauthorized use until such time the Forest is able to implement the restriction and place a barrier that is intended to be an effective restriction. However, such unauthorized would not affect secure habitat because the area is not currently providing secure habitat.

As such, unauthorized motorized access could only affect secure habitat with unauthorized off-road use or unauthorized 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 or adjacent to (within a 500-meter buffer) secure habitat. Any impacts to secure habitat are expected to be short-term and temporary and would not affect the Forest's motorized access metrics for secure habitat unless the Forest does not address the unauthorized use and such use becomes chronic or frequent or the Forest makes a decision to authorize motorized use, thus resulting in long-term impacts to secure habitat. A site-specific consultation would occur in this situation.

Grizzly bears have been observed in many areas of the Forest, suggesting that the on-the-ground conditions within the action area, including some level of unauthorized motorized use, are conducive to supporting grizzly bears. Grizzly bears have successfully traveled from recovery zones to live on or move through the Forest during times of known unauthorized motorized use of undetermined routes as well as some level of unknown unauthorized motorized use. The likelihood that unauthorized motorized use has significantly impacted grizzly bears in the action area is extremely low.

Unauthorized motorized use is not authorized, carried out, or funded by the Forest. The impacts of chronic or frequent unauthorized motorized use in the action area were already considered in the baseline metric for secure habitat. Based on the best available information, other site-specific unauthorized motorized use is typically temporary and short-term. While the impacts of unauthorized 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 in response to the majority, if not all, unauthorized motorized use as the impacts associated with such use would also be temporary and short-term and was not authorized, carried out, or funded by the Forest. In other words, unauthorized motorized access that may be occurring but is not chronic or frequent could not be accurately calculated into the access metrics used to measure impacts to grizzly bears associated with the Forest's motorized access conditions. The motorized access metrics are complex, requiring a level of detail that is not feasible to obtain for unknown unauthorized motorized use. When the Forest authorizes motorized use of Forest lands, it provides specific information on the location and length of the entire route and whether the route is: open to the public year-round or seasonally; used for administrative use only; or is completely restricted to all motorized access. They know where their roads are and what type of use they can receive, which allows them to calculate the metrics associated with motorized routes and/or secure habitat. When private individuals breach a closure device or drive in an area that is not authorized for such use, the information on such use is not as easily obtained. Although we may be able to assess the points

where unauthorized motorized access starts (i.e. the point where an unauthorized user leaves an authorized route), information as to the following, among other conditions, is often unknown: the length of unauthorized use (was it a 100 feet or several miles?, etc.), duration of unauthorized use (how long was the unauthorized use – several minutes or several days?, etc.), amount of unauthorized use (how many trips – 1 trip or 100 trips?, etc.), type of unauthorized use, and location (where did the unauthorized use occur in relation to other motorized routes and what was the grizzly bear use at a given time?).

Further, it is not possible to determine whether a grizzly bear was even in the area at the time of the disturbance from the unauthorized motorized use. If a grizzly bear was in the area at the time of unauthorized motorized use, it is not possible to accurately determine the extent of impacts as the grizzly bear may have not reacted in any way, it may have been startled, or it potentially fled the area temporarily. In addition, although it may be possible to identify where a motorized user breached a gate or other closure device, it is difficult or impossible to know where they traveled past that closure, particularly if the road is available and open for administrative use. Accordingly, the Service and the Forest are not able (and never will be able) to fully calculate the extent of such impacts to individual grizzly bears let alone calculate motorized access metrics that include unauthorized motorized use that is not chronic or frequent.

As such, with all of the unknown information associated with unauthorized motorized access, some assumptions based on the best available information are warranted. Mainly, we assume that much of the potential unauthorized motorized access is temporary and short-term because the Forest addresses unauthorized motorized access issues as soon as they are able. If the Forest addresses the unauthorized use upon having knowledge of such use, then we would not expect the unauthorized use to occur for a lengthy duration or be frequent or chronic. Therefore, the Forest's calculations of motorized access conditions (secure habitat) would not be affected in those situations.

In addition, unauthorized motorized use has always been part of the environmental baseline. It was an ongoing condition when researchers conducted their research on the effects of motorized access on grizzly bears. In other words, when the researchers studied bear movements in relation to open, restricted, and closed roads, some level of unknown illegal or unauthorized motorized access was likely occurring at that time within the home ranges of the female grizzly bears. Thus, the data relied upon to establish motorized access metrics to manage for grizzly bears inherently includes some extent of unknown unauthorized motorized access that was occurring during the scientific research. As such, continued sporadic unauthorized motorized access would not result in a need to update the Forest's motorized access metrics.

The only situation where unauthorized motorized access may affect the Forest's metrics used in calculating impacts to grizzly bears from motorized access would be if the Forest was aware of unauthorized use at a given location and did not or was unable to address the issue or stop the unauthorized use from occurring, thereby resulting in chronic or frequent unauthorized motorized access. Depending on the location of the chronic or frequent unauthorized motorized use in relation to other motorized routes and to grizzly bear use in the area, additional impacts to grizzly bears may result. Information as to the duration and length of unauthorized use would likely be known in such a chronic situation. As such, calculating chronic or frequent unauthorized motorized use into the Forest's motorized access metrics may be warranted and possible, as the impacts would be known and would be ongoing (as opposed to short-term and

temporary). The ongoing impacts of such chronic unauthorized motorized access may be insignificant or adverse depending on site-specific conditions within the action area (see information below on effects of motorized access). For example, if the chronic unauthorized motorized access was located within a roaded area and not within or adjacent to secure habitat, then secure habitat would not be affected.

Given that it is inappropriate to include short-term, temporary unauthorized motorized access in the Forest's authorized motorized access metrics and given that to even attempt to do so would require making unsupported and arbitrary assumptions, the Service acknowledges that the impacts of unauthorized motorized access on grizzly bears are most appropriately addressed in a qualitative manner. While past and ongoing impacts to grizzly bears may occur as a result of unauthorized motorized access, it is the Service's opinion that the location and extent of such impacts are not reasonably certain. As mentioned, information as to the length, duration, amount of use, type of use, and location, habitat quality, occurrence of a grizzly bear at the time of unauthorized motorized use, wariness of an individual grizzly bear, among other conditions, is, and will continue to be, unpredictable. As such, it is difficult to determine the exact influence of unauthorized motorized use on grizzly bears and the Service and the Forest are unable to specifically quantify the extent of impacts to grizzly bears.

In sum, unauthorized motorized access on the Forest has the potential to affect individual grizzly bears. If grizzly bears are in the vicinity of unauthorized motorized access, such unauthorized use would most likely result in short-term, temporary disturbance impacts to grizzly bears. However, the amount, location, duration, and timing of impacts resulting from past and ongoing unauthorized use that was not chronic is, and will continue to be, unknown. The probability of long-term unauthorized motorized access occurring and the probability of unauthorized motorized access coinciding with the presence of grizzly bears is anticipated to be low but is uncertain. As such, the potential consequences to grizzly bears are uncertain.

While we may be unaware of all past or ongoing (present) site-specific instances of unauthorized motorized access, we do expect some very low amount of Forest users have chosen to use unauthorized portions of the Forest via motorized access. What we can anticipate, based on the best available information from the Forest on unauthorized motorized use that has occurred in the past and the Forest's response to such unauthorized use, is that any disturbance impacts associated with unauthorized motorized use is expected to be spatially disparate, short-term, and temporary in the majority of situations of unauthorized motorized access as opposed to long-term displacement impacts because once the Forest becomes aware of the issue, they correct the situation as soon as they are able, if they are able. 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). Moreover, most Forest users follow travel regulations. Past and present unauthorized motorized access is not likely to collectively result in adverse impacts to grizzly bears.

Although disturbance impacts to grizzly bears may have occurred as a result of unauthorized motorized access on the Forest, it is the Service's opinion that such impacts are reasonably uncertain. Accordingly, the Service and the Forest are not able to fully quantify the extent of such impacts to individual grizzly bears. However, it is our opinion that the impacts of any unauthorized motorized access on the grizzly bear populations are likely low as evidenced by 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. When compared with the trends in grizzly bear demographics, some level of unknown ongoing unauthorized motorized use has occurred during the same time that the grizzly bear population has been showing improvements in population size and survival rates. For example, the NCDE grizzly bear population has more than tripled in size and their occupied range has expanded since grizzly bears were listed as threatened in 1975 despite some level of ongoing unauthorized motorized use over the years.

Winter Motorized Use

Under the existing condition, more than half (approximately 56 percent) of the action area within the recovery zone is within designated wilderness, where over-the-snow motorized travel is prohibited. Within the Rocky Mountain Range GA, winter motorized travel is authorized only on main access roads (none of which are within modeled grizzly bear denning habitat) and approximately 30,000 acres off roads (approximately 8,000 acres overlap with modeled denning habitat). Thus, the authorized snowmobile use within denning habitat in the Rocky Mountain Range GA is limited to relatively small portions of four subunits (Teton, Pine Butte, West Fork Beaver, and South Fork Willow). Snowmobile use within the Rocky Mountain Range GA is prohibited after March 31.

Within the Upper Blackfoot GA, authorized snowmobiling is allowed on about 53,000 acres (approximately 6,400 acres overlap with modeled denning habitat) within the recovery zone. This snowmobile use occurs within all three subunits within the Upper Blackfoot GA (Alice Creek, Arrastra, and Red Mountain). Snowmobile use within the recovery zone portion of the Upper Blackfoot GA is prohibited after March 31 with the exception of the Copper Bowls play area where snowmobile use is allowed until May 31. The Copper Bowls play area does not affect OMRD because the access to this area is on a yearlong open road. No restricted roads are used to access this extended use area. Within the Copper Bowls extended use area, 1,891 acres are designated as secure core, consequently affecting secure core during the non-denning period. Although these 1,891 acres of secure core in the Copper Bowls extended use area may be compromised for a short period of time (from April 1 up to May 31), they remain designated as secure core and will continue to provide secure core during the remainder of the non-denning period. The 2021 Forest Plan includes a plan component to cap the amount of area available to motorized over-snow travel in modeled denning habitat within the PCA (recovery zone) 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 recovery zone during the den emergence time period.

Within the remaining portions of the Upper Blackfoot GA outside of the recovery zone, areas north of Highway 200 (specifically within portions of the Dalton Mountain GBAU) are open to snowmobiling through March 31 on approximately 1,800 acres. This use overlaps within approximately 4 acres of modeled denning habitat. Elsewhere in the Upper Blackfoot GA, areas south of Highway 200 (including portions of Dalton Mountain and Humbug GBAUs) are open to snowmobiling through April 15 on approximately 70,000 acres; roughly 7,600 of those acres overlap modeled denning habitat.

For the GBAUs across the remaining portions of the Forest, the dates during which over-snow motorized travel is authorized vary from yearlong to ending on May 15. Snowmobile use that extends beyond March 31 overlaps with approximately 112,535 acres of modeled denning habitat. Many areas on the Forest are relatively dry and snow can be intermittently present. Thus, not all areas legally open to over-snow motorized travel are actually available during the entire time they are open.

Winter non-motorized activities include cross country skiing, winter hiking, dog sledding, fat-tire biking, trapping, hunting, and fishing, among others. In general, non-motorized activities are permissible across much of the Forest. Non-motorized activities occurring during the grizzly bear denning season are not expected to have significant impacts to grizzly bears.

Aircraft use

Low-elevation aircraft flights (less than 500 meters above ground level; AGL), occur on the Forest for a variety of activities, including but not limited to: wildland and prescribed fire ignition or suppression actions, invasive weeds treatment, species reconnaissance (e.g., population counts by the state), military operations, recreation special uses, minerals, oil, and gas exploration, or other emergency responses (e.g., flooding). Increasing numbers of activities are utilizing unmanned aircraft systems (UAS; such a drones) in addition to helicopters and fixed-wing aircraft. It is not possible to quantify the amount of low-elevation flights from both aircraft and drone use, but use of aircraft is expected to continue and potentially increase for the life of this document.

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 impacts to any grizzly bears that may be in the area during the time of aircraft activity. Impacts from such disturbance may range from none, to insignificant, to adverse depending on location and duration and type of activity, among other things. The Montana/Northern Idaho Level 1 Terrestrial Biologist team assembled a guidance document (Montana/Northern Idaho Level 1 Terrestrial Biologist Team 2009) to provide additional information and improve consistency for estimating effects and potential minimization criteria to reduce disturbance to grizzly bears from aircraft. This document is currently under revision and will incorporate the best available science associated with effects from low-level flights from both aircraft and drones. Once available, the updated guidance will be used in future project-level analyses.

Food and Attractant Management and Site Development

The Forest has a history of maintaining food storage orders to prevent bear-human conflict. A special order (food storage order) requiring food, garbage, and other attractants to be stored in a manner that is unavailable to bears has been in place on the Rocky Mountain Range GA since at least 1987 and on the recovery zone portion of the Upper Blackfoot GA since at least 1993. These food storage orders have been updated several times, most recently in 2010. In 2018, the Forest began implementing Forest-wide food storage orders that apply in all GAs that were not already included in an existing food storage order. Currently, the Forest has two active food storage orders: order R1-2023-02, which applies to the entirety of the Forest, with the exception of the Crazy Mountain Range (expires on December 31, 2028) and order 01-15-07-25-03, which

applies to the Crazy Mountain Range on the Belt Creek-White Sulphur Springs Ranger District (expires on December 31, 2028). This analysis assumes new food storage orders will be drafted and signed after the current orders expire as the duration of this analysis is longer than the current food storage orders.

Enforcement of the food storage orders has been ongoing for many years within the Rocky Mountain Range and Upper Blackfoot GAs. Implementation of the food storage order elsewhere on the Forest included a major information/education effort during the first year (beginning in 2018) and is subsequently focused increasingly on enforcement. These orders provide enforceable language regarding food, attractant, and carcass storage and handling to prevent human-grizzly bear conflicts. The food/attractant storage order is an important conservation action that has reduced the potential for human-bear conflicts and mortality risk. All public and permitted users of the Forest are required to follow the orders with the exception of people with a special use authorization or other authorization that specifically exempts them from the effects of the order or any federal, state, or tribal employee placing baits for research or management purposes as part of their official duties.

Developed recreation sites are sites or facilities with features that are intended to accommodate public use and recreation, such as campgrounds, trailheads, rental or permit cabins, lodges, ski areas, fire lookouts, 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. The Forest has a total of 215 developed recreation sites (not including permitted cabins and lodges) spread across the action area, including but not limited to boating access points, interpretive pullouts, campgrounds, and trailheads. Of these, a total of 22 developed recreation sites that allow overnight use (rental cabins, campgrounds) occur on the Forest within the recovery zone, along with 99 permitted recreation residence cabins and 4 permitted commercial lodges. The 2021 Forest Plan includes limits within the recovery zone on the number and capacity of developed sites that are available to the public for overnight use. All users of any developed recreation site throughout the action area are required to adhere to the food storage orders.

Recreation settings are categorized into six Recreation Opportunity Spectrum (ROS) classes ranging from ‘primitive’ (e.g., designated wilderness, recommended wilderness areas, and others) to ‘rural’ (e.g., areas immediately adjacent to small communities or private land inholdings, and others), to ‘urban’. ROS categories provide some indication of the overall amount of area in which general types of recreation are allowed and can be useful in describing the general settings created by implementation of the existing Forest Plan. Table 31 in the supplement to the biological assessment displays the acreage of ROS classifications, (U.S. Forest Service 2025).

Since implementation of the first food storage order, only one known instance of a management removal or death of a grizzly bear due to improperly stored attractants has occurred on the Forest. A grizzly bear on the Rocky Mountain ranger district got into improperly/illegally stored horse feed at a hunting camp in late 1999, and subsequently caused damage to several hunting camps and Forest tack sheds in the area. Attempts to trap the bear that year were unsuccessful. The same bear broke into the Green Fork administrative cabin in the Scapegoat Wilderness the following year (fall 2000) and was trapped and euthanized. Given the food/attractant storage orders and policies that are in place and Forest Plan direction that discourages expansion of

developed recreation sites in the recovery zone, 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 impacts by causing habitat displacement or food-conditioning of grizzly bears.

Livestock Management

The Forest has 240 active grazing allotments. Table 3 displays these allotments by GA. Specific numbers of animals grazing on any given allotment, along with timing and duration of use, are established annually in Annual Operation Plans and vary from year to year. Annual Operation Plans must comply with regulations in the Forest Plan direction, and are based on a permittee needs, range condition, and other resource considerations.

Table 3. Acreage of livestock grazing allotments by geographic area (U.S. Forest Service 2025).

Geographic Area (GA)	Total GA Acres[1]	Acres of GA in Grazing Allotments (percent of GA with grazing allotments)	Active Allotments as of 2019	Permitted Head Months[2]
Big Belts	449,719	233,854 (52%)	32	14,036 cattle; 3,315 sheep; 1,901 PLP
Castles	79,317	56,315 (71%)	12	6,468 cattle; 377 PLP
Crazies	70,046	59,539 (85%)	11	4,095 cattle; 525 PLP
Divide	231,767	134,425 (58%)	23	7,326 cattle; 1,175 PLP
Elkhorns	174,050	90,506 (52%)	11	7,514 cattle; 389 PLP
Highwoods	44,217	40,680 (92%)	9	5,750 cattle
Little Belts	897,977	502,867 (56%)	79	18,233 cattle; 2,179 PLP
Rocky Mountain Range	797,941	175,547 (22%)	26	6,755 cattle; 18 PLP
Snowies	121,760	57,227 (47%)	22	4,057 cattle; 919 PLP
Upper Blackfoot	354,505	77,991 (22%)	15	3,980 cattle; 2,739 sheep

[1]Acreage includes all lands within the GA boundary because some allotments and/or permitted head months include both private inholdings and adjacent Forest lands.
[2]A head month is defined as one month's occupancy by one animal (weaned or adult cow with or without calf, a bull, a steer, a heifer, a horse, a burro, a mule, 5 sheep, or 5 goats). PLP refers to 'private land permit', which authorizes grazing of generally unfenced private inholdings within a larger Forest allotment.

No documented grizzly bear mortalities associated with livestock have occurred within the action area. Although no grizzly bear mortalities are associated with livestock grazing on the Forest, the 2021 Forest Plan focuses on reducing the potential for impacts to grizzly bears within the recovery zone and NCDE zone 1 via the reduction in the risk of bear-human conflicts, requiring

reporting of livestock carcasses, and capping the number of active cattle allotments. The 2021 Forest Plan also includes standards to cap animal-unit months on sheep grazing permits returning to use from non-use status in the recovery zone, capping the number of active sheep grazing allotments and sheep animal unit-months in the recovery zone and NCDE zone 1, and limiting the use of temporary small livestock grazing permits in the recovery zone and NCDE zone 1 for purposed such as weed control. It is also recommended that the Forest reduce the number of active sheep allotments in the recovery zone if the opportunity arises. There are currently 5 active sheep allotments on the Forest with 3 in the Upper Blackfoot GA (within both the recovery zone and NCDE zone 1) and 2 in the Big Belts (within NCDE zone 2). The overall impacts associated with existing livestock management have been insignificant. General impacts related to livestock grazing are further described in the effects section below.

Vegetation and Fire Management

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 existing plans also include standards for maintaining hiding cover to benefit big game and other species. The 2021 Forest Plan includes guidance to reduce the risk of disturbance to bears during or as a result of vegetation management activities (PCA-NCDE-GDL-04, PCA-NCDE-GDL-07, and PCA-NCDE-GDL-08) and to maintain or increase habitat (PCA-NCDE-GDL-05) and cover (PCA-NCDE-GDL-06) where possible. Vegetation management must also adhere to other grizzly bear related guidance, including standards regarding motorized route density and food storage orders.

Currently, approximately 368,814acres (13 percent of the action area) of the Forest is considered suitable for timber production (the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use). Areas that are not suitable for timber production include such things as Recommended Wilderness Areas, eligible wild and scenic river corridors, riparian management zones, certain cultural and historical sites, and some others. In addition, lands with marginal timber growth potential based on landscape or vegetation characteristics, areas with limited access (including, for example, most areas identified with ‘Primitive’ or ‘Semi-primitive non-motorized’ Recreation Opportunity Setting categories), or areas with certain other management emphasis are not included in the lands suitable for timber production. Harvest for other multiple use values and purposes may occur on an additional 40 percent of the action area that are not suitable for timber production. Average annual total harvest is calculated by decade and is displayed in Table 4 below.

Fire management activities that may affect grizzly bears on the Forest include wildland fire (unplanned ignitions) and fuels treatments (vegetation management in specific areas and planned ignitions, including prescribed fire). Wildfire has a strong influence on the age distribution and spatial arrangement of forest vegetation, with substantial variation from year-to-year. Naturally-ignited wildfires have been used under certain circumstances to meet resource objectives. Suppression of wildfire has also been used for management of wildfires. The Forest currently conducts prescribed burning on an average of 13,000 acres per year, which includes both

forested and non-forested vegetation types. Actions associated with fire management activities for both planned and unplanned ignitions may include administrative road use, temporary road building, low-elevation flights (aircraft or unmanned aerial systems) for aerial ignition or wildland fire, establishing command posts and other activities that increase human presence (e.g., spike camps), mechanical equipment use (e.g. heavy equipment such as bulldozers), and others. Refer to Table 4 below for the total acres per decade treated under harvest, prescribed fire, fuel reduction, and wildfire acres managed for resource benefit.

Table 4. Acres of vegetation treatments and wildfire acres managed for resource benefit by decade, 1980-2017 (U.S. Forest Service, in litt. 2020).

Decade	Harvest (acres)[1]	Prescribed Fire (acres)[2]	Fuel Reduction (acres)[3]	Wildfire Managed for Resource Benefit (acres)
1980-1989	23,525	32,211	44,387	89,735
1990-1999	30,775	51,460	95,418	5,723
2000-2009	10,680	51,826	52,473	79,121
2010-2017	9,564	23,964	65,010	160,980

[1]Harvest activities include even-aged, uneven-aged, and intermediate harvest treatments.
[2]Includes overlap of burning in harvested stands. Prescribed fire activities include broadcast burning, jackpot burning, site preparation burning, and underburning. See the Fire and Fuels section for information on wildfires, including those used for resource benefit.
[3]Fuel reduction treatments include burning of piled material, chipping, compacting/crushing, fuel break, misc. treatment of natural fuels, piling, rearrangement, and thinning of hazardous fuels.

Impacts 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 impacts are further described in the effects section below.

Energy and Mineral Development

Mineral development refers to surface and underground hardrock mining and coal production, which are regulated by permits on the Forest. Oil and gas production are conducted through a leasing process. Lands on the Forest are generally available for both locatable and leasable minerals exploration and development, with the exception of designated wilderness areas, and areas that are either administratively or congressionally withdrawn from those uses. Administratively withdrawn areas includes but may not be limited to campgrounds, administrative sites, or other identified developed sites. The Elkhorns Wildlife Management Unit within the Elkhorns GA is also administratively withdrawn from oil and gas leasing, but could be available for other types of leasable minerals exploration and development. By act of congress, the entire Rocky Mountain Range GA is withdrawn from future locatable or leasable minerals exploration or development.

Locatable mineral uses are managed through Plans of Operation and Notices of Intent that are developed at the time specific plans for minerals exploration or development are submitted to the Forest. The Forest averages roughly 30 active Plans of Operation or Notices of Intent in a given year, each of which generally disturbs less than one acre. The actual number that are active in

any given year changes and is generally dependent on the market price for the minerals of interest.

Within the recovery zone, the only commercial hardrock mining rights on the Forest are for the Cotter Mine in the Upper Blackfoot GA. No mining activity is currently occurring at that site. Eight lease parcels occur in the Big Belts GA and are on hold pending further review and decision. The parcels are on hold because they are within an IRA. In the Rocky Mountain Range GA all previously existing oil and gas leases have been cancelled and the GA is unavailable for future oil and gas exploration and development because of Congressional actions.

The 2021 Forest Plan includes standards and guidelines to further reduce the potential for impacts to bears of mining, and oil and gas exploration and development. These include measures to reduce or mitigate potential impacts to bears (PCAZ1- NCDE-STD-05 through 10, PCAZ1-NCDE-GDL-02 and 03, PCAZ1- NCDE-GDL-05), require bear safety training for personnel involved in minerals and energy development activities (PCAZ1-NCDE- STD-11), and require no surface occupancy for new leases within the PCA (PCA-NCDE-STD-12). These requirements and guidelines are focused on the PCA and Zone 1, where management goals include recovering and sustaining recovery of the grizzly bear population. Plans for exploration for or development of minerals or oil and gas elsewhere on the Forest (e.g. in NCDE zones 2 and 3), should they occur, would currently be guided by site-specific analysis that would include consideration of wildlife, including grizzly bear habitat needs to the extent allowed by legal mineral rights.

Impacts 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 impacts are further described in the effects section below.

Connectivity

The forest plan contains numerous goals, objectives, and standards that may benefit grizzly bears and their habitats. These goals, objectives, and standards work towards protecting wildlife habitat and resources for grizzly bears, including 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 is approaching or within the dispersal range of male bears.

Connectivity between grizzly bear ecosystems can reduce genetic fragmentation and enhance genetic diversity (U.S. Fish and Wildlife Service 1993, Miller and Waits 2003), which improves resiliency of these populations. Human settlements, highways, and human-caused mortality contribute to grizzly bear population fragmentation (Servheen et al. 2001), including reduced rates of movement and genetic interchange. Although male grizzly bear movements across landscapes contributes to gene flow, female grizzly bear movement within and between ecosystems influences population trends (Proctor et al. 2012). Because female grizzly dispersal is generally shorter in distance compared to males, it is important to maintain habitat components in adjacent areas to support female life history requirements to promote dispersal (Proctor et al. 2004, Proctor et al. 2018). Since grizzly bears require large blocks of land with limited human influence to accommodate natural history needs (home range sizes, food diversity, cover, dens, etc.), maintaining or improving connectivity by reducing human influence and improving secure habitat (i.e., attractant storage and motorized access reductions) is important for demographic connectivity (Proctor et al. 2018, Whittington et al. 2022).

Grizzly bears in the GYE showed low rates of inbreeding and an increase in population size between 1982 to 2007 (U.S. Fish and Wildlife Service 2022). In addition, there is no indication of habitat fragmentation within this population (*Ibid*.). Grizzly bears in the NCDE have a high genetic diversity, are sufficiently geographically connected to populations in Canada, and have a population large enough to ensure genetic health (*Ibid*.). Kendall and others (Kendall et al. 2009) concluded that there are few geographical barriers to the movement of grizzly bears within the ecosystem, and that the NCDE grizzly bear population does not suffer from a lack of genetic diversity. The only suggestion of human-caused population fragmentation within the NCDE was along the U.S. Highway 2 and BNSF rail line corridor between Glacier National Park and Forest Service lands (U.S. Fish and Wildlife Service 2022). Back in 2009, researchers identified, through genetic measures, that human-caused habitat fragmentation within the NCDE was manifest on the western side of the U.S. Highway 2 / railroad corridor, attributed to high mortality rates from vehicle and train collisions (when compared to other areas of the ecosystem) (Kendall et al. 2009).

Connectivity between the GYE and the NCDE is a long-term goal in the state of Montana, which includes potential translocations to improve or enhance genetic diversity. It is estimated that periodic immigration (one to two male migrants every 10 years) would be sufficient to provide for genetic connectivity of the GYE (Miller and Waits 2003). Connectivity between the BE and the other grizzly bear Recovery Zones has recently been researched and includes pathway

predictions for both natural recolonization and reintroduction to improve or enhance genetic diversity (Sells and Costello 2024). The NCDE appears to be more than capable of serving as a source population for other grizzly bear populations 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 and BE (Servheen et al. 2001, Sells and Costello 2024). 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 and BE and predicted pathways of greatest use were associated with forested mountain ranges. Two primary pathways were identified connecting the NCDE and GYE: one west of Helena and Bozeman along the Garnet, Nevada, Boulder, Tobacco Root, Madison, and the Gravelly Mountains, and one east of both towns along the Big Belt, Bridger, and Gallatin Mountains. The GYE and BE were connected by the Sapphire, Anaconda, Highland, Tobacco Root, Gravelly, and Gallatin Mountains and one along the Beaverhead, Tendoy, and Centennial mountains, with grizzly bear verified sightings within some predicted pathways (Sells et al. 2023).

Climate Change

In SSA, the Service examined climate change and potential impacts on grizzly bears (U.S. Fish and Wildlife Service 2022). The most likely ways in which climate change may potentially impact 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 impacts 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 2022). 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 2022). 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. The

Interagency Grizzly Bear Study Team (IGBST) examined the potential influence of whitebark pine decline on the change in the grizzly bear population growth rate. The results of these analyses were summarized in a report titled "Response of Yellowstone grizzly bears to changes in food resources: a synthesis" hereafter referred to as the Food Synthesis Report (IGBST 2013) and is incorporated by reference. The Food synthesis report addresses several research questions regarding the decline in whitebark pine and potential effects to grizzly bears. In summary, it was determined that: the grizzly bear diet is very diverse, with over 260 species of foods consumed by grizzly bears in the GYE and whitebark pine does not occur in the home ranges of nearly one third of grizzly bears in the GYE; grizzly bear selection of whitebark pine habitat and duration of use decreased between 2000 and 2011; body condition (body mass and percent body fat) was not different between poor and good years of whitebark pine seed production; in years with poor whitebark pine seed production, grizzly bears diets included more meat consumption, showing that grizzly bear responses to changing food resources were primarily behavioral; movement rates did not change during 2000 to 2011, suggesting that as whitebark pine seeds became less available grizzly bears were able to find alternate foods within their home range; grizzly bear mortality did increase during years of poor whitebark pine seed production when compared to good whitebark pine seed production years, however the increase in mortality has not led to a decline in the population trend and total mortality is expected to be maintained within the total allowable mortality limits; and while whitebark pine seed production can influence the reproduction rates of grizzly bear in the following year, overall fecundity rates from 2002 through 2011 did not decline from previous rates. Refer to the Food Synthesis Report for detailed information supporting this summary (*Ibid*.).

In sum, grizzly bears in the GYE that use whitebark pine are accustomed to successfully finding alternative natural foods during years of poor whitebark pine seed production. They are able to make behavioral adaptations as necessary in acquiring adequate food resources across a diverse and changing landscape. For example, in the NCDE, whitebark pine has been functionally extinct as a grizzly bear food resource for at least 40 years and the NCDE grizzly bear population has continued to increase and thrive (*Ibid*.). Similarly, although whitebark pine seed production, along with the availability of cutthroat trout in the Yellowstone Lake area, has varied over time, the GYE grizzly bear population has continued to increase and expand during despite the changes in food sources. The GYE grizzly bear population has long been managing with the unpredictable nature of whitebark pine seed production and are not dependent upon its seeds for survival; nor do they have a diet that is specialized on these seeds (*Ibid*.). As described in the Food Synthesis Report (IGBST 2013) and supporting studies (*in* IGBST 2013), grizzly bears have shown to be resilient to declines in whitebark pine seed production and other high-calorie foods such as cutthroat trout, which demonstrates that changes in food resources are not likely to become substantial impediments to the long-term viability of the GYE grizzly bear population (*Ibid*.).

Therefore, the overall decline in whitebark pine throughout its range is not expected to result in significant effects to grizzly bears that use the action area. They have adapted and/or continue to use other food resources and the GYE population remains stable to increasing in their numbers and has increased in their distribution 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 2022). 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 impacts 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 impacts of climate change on grizzly bears will be limited. The SSA (*Ibid*.), incorporated by reference, has further information on the impacts to grizzly bears associated with climate change.

Existing Projects

Several projects are ongoing on the Forest and are likely to continue after the completion of this biological opinion on the 2021 Forest Plan. These projects and consultations are summarized below. Consultation with the Service has been completed for these actions, thus the actions are included in the environmental baseline. Most of the projects described below are programmatic in nature and are either site-specific projects that are tiered to a programmatic consultation or programmatic consultations that are being tiered to or could be tiered to. As mentioned, some of the effects associated with the existing programmatic consultations are likely to continue under the 2021 Forest Plan. Stand-alone consultations that are not programmatic in nature (i.e. they are not tiered to a programmatic biological opinion and are not being tiered to) are not all specifically described below since their effects have been fully considered in the baseline conditions displayed above and those effects will not continue in the longer-term under the 2021 Forest Plan consultation.

Some existing consultations described below will continue to remain valid post consultation on the 2021 Forest Plan. Other consultations were superseded by the 2022 revised biological opinion on the 2021 Forest Plan including those biological opinions associated with the Blackfoot-North Divide Winter Travel Plan, continued implementation of the existing Forest Plan, and the NCDE grizzly bear amendments associated with the existing Helena and Lewis and Clark Forest Plans. As the applicable biological opinions have already been superseded, they are no longer included in this baseline section on existing projects.

Birch Creek South Travel Plan

In 2006, the Service and the Forest consulted on the effects of the Birch Creek South travel plan on grizzly bears. The proposed action was the development of a programmatic travel plan for the non-wilderness portion of the Rocky Mountain Ranger District south of the North Fork of Birch Creek. The proposed Travel Plan would decrease the amount of roads open to motorized travel as well as trails open to ATV and motorcycle travel. The Forest's determination of effects for grizzly bears was 'may affect not likely to adversely affect'. The Service concurred with that determination on September 18, 2006 (U.S. Fish and Wildlife Service 2006). Implementation of the Birch Creek South travel plan will continue as planned under the 2021 Forest Plan.

Badger-Two Medicine Travel Plan
In 2008, the Service and Forest consulted on the effects of the Badger-Two Medicine travel plan on grizzly bears. The proposed action was the development of a programmatic travel plan for the non-wilderness portion of the Rocky Mountain Ranger District north of Birch Creek in the area commonly known as the Badger-Two Medicine Area. A total of approximately 9 miles of road would be open yearlong or seasonally to motorized travel. The majority of those roads would be restricted to existing roads along the periphery of the travel plan area. The roads access campgrounds, trailheads, and firewood cutting areas. Approximately 3.7 miles of the Whiterock Pass Road near the eastern boundary of the area would be open only for very occasional travel by permittees to access communication sites for maintenance or emergency repairs, but would not be open at any time to the public or for routine administrative travel. No trails would be open to motorized travel of any kind. Snowmobile travel would not be allowed anywhere in the travel plan area. The Forest's determination of effects for grizzly bears was 'may affect not likely to adversely affect'. The Service concurred with that determination on December 15, 2008 (U.S. Fish and Wildlife Service 2008). Implementation of the Badger-Two Medicine travel plan will continue as planned under the 2021 Forest Plan.

Divide Travel Plan
In 2016, the Service and Forest consulted on the effects of the Divide Travel Plan on grizzly bears. The Divide Travel Plan established motorized and non-motorized access management direction for most of the Divide Landscape. The consultation did not address the implementation of the Travel Plan, just the programmatic management direction. Separate site-specific decisions and actions have and will implement the Divide Travel Plan. The Divide Travel Plan direction included a reduction in the miles of roads open to the public, an increase in miles of motorized trails, changes in seasonal use of some roads, a decrease in snowmobile trails, and an increase in the extent of areas closed to cross-country snowmobiling. Refer to the biological opinion on the Divide Travel Plan for specific information (U.S. Fish and Wildlife Service 2016a).

As a result of the Divide Travel Plan, some areas will have no motorized activity while other areas will receive heavy motorized use. However, the likelihood for disturbance and displacement due to access management would decrease from the existing condition as a result of the Travel Plan direction since the linear open route densities would decrease. While an improvement in access conditions will occur, some areas of high linear road densities will still occur in localized areas. Areas with high road 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. Based on this, the Divide Travel Plan would have the potential to adversely affect some individual grizzly bears. However, grizzly bears are evidently tolerating existing levels of road densities in some areas.

The proposed action would increase the miles of designated non-motorized trails for hiking, horseback riding, and mountain biking. Non-motorized trails are not expected to result in significant or adverse effects. In addition, the Divide Travel Plan will reduce the number of miles of snowmobile routes and increase the amount of area closed to snowmobiles. Grizzly bear denning had not been documented in the action area and the likelihood that denning is occurring is very low. Thus, effects to grizzly bears from snowmobiling are extremely unlikely to occur.

Although the proposed Travel Plan may result in adverse effects to some individual grizzly bears, we do not anticipate that these effects will have appreciable negative impacts on the NCDE grizzly bear population. The action area is located completely outside the recovery zone. Even though areas outside the recovery zone are not necessary for the conservation of the species, they have been managed in such a way that have allowed grizzly bears to expand into them. Grizzly bears outside of recovery zones probably experience a higher level of adverse impacts due to land management actions than do grizzly bears inside. However, grizzly bears are able to live in habitat outside of the recovery zones despite lack of mandated habitat protections or direction specific to grizzly bear management. Although individual grizzly bears may be adversely affected at times related to the Divide Travel plan and associated access management, we anticipated that grizzly bears will continue to occur within the Divide Travel Plan action area into the future. We concluded that the Divide Travel Plan minimizes the potential for adverse impacts to grizzly bears when compared to previous access management. Based on the best available information, the Service concluded that the Divide Travel Plan would not significantly affect the grizzly bear population. Implementation of the Divide Travel Plan will continue as planned under the 2021 Forest Plan.

Blackfoot Non-Winter Travel Plan

In 2016, the Service and Forest consulted on the effects of the Blackfoot Non-Winter Travel Plan on grizzly bears. The proposed action was the development of a programmatic non-winter travel plan for that portion of the Blackfoot landscape area (Lincoln Ranger District) occurring outside the Scapegoat Wilderness. The proposed action designated motorized and non-motorized routes for non-winter travel and resulted in changes to the existing motorized and non-motorized route system. It included closing some roads and trails that were currently open to motorized use and opening some roads and trails for motorized use that were currently closed. It also included some limited new construction and reconstruction of roads and trails. Refer to the biological opinion on the Blackfoot Non-Winter Travel Plan for specific information on proposed actions (U.S. Fish and Wildlife Service 2016b).

Based on road density, the Blackfoot Non-Winter Travel Plan has the potential to adversely affect grizzly bears. However, the overall level of adverse effects would decrease from the previous condition and improvement to motorized access conditions would improve both inside and outside of the recovery zone. While an improvement in overall access conditions will occur, some areas of high linear road densities will still occur in localized areas. Some areas will have no motorized activity while other areas will receive heavy motorized use. Although an overall reduction in open motorized routes would occur, the connectivity among some motorized routes, in particular motorized trails, would increase due to opening of currently closed connector routes and/or the construction of connector routes. In addition, the proposed action would increase the miles of designated non-motorized trails for hiking, horseback riding, and mountain biking.

Road densities authorized under the Blackfoot Non-Winter Travel Plan have the potential to adversely affect some grizzly bears in some areas. The likelihood for disturbance and displacement due to access management would decrease from the previous condition as a result of implementation of the Blackfoot Non-Winter Travel Plan. Specific areas with higher road 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 appear to be tolerating existing road densities in some areas.

Although the Blackfoot Non-Winter Travel Plan 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 NCDE grizzly bear population. The areas of higher route densities are mostly those areas occurring outside the recovery zone. Even though the areas outside the recovery zone are not necessary for the conservation of the species, they have been managed in such a way that have allowed grizzly bears to expand. The Blackfoot Non-Winter Travel Plan will reduce linear road densities, thus improving the access conditions over the previous condition. Although individual grizzly bears may be adversely affected at times related to the Blackfoot Non-Winter Travel Plan and associated access management, we anticipated that grizzly bears will continue to occur within the action area, both inside and outside of the recovery zone, into the future. Based on the best available information, the Service concluded that the Blackfoot Non-Winter Travel Plan would not significantly affect the grizzly bear population. Implementation of the Blackfoot Non-Winter Travel Plan will continue as planned under the 2021 Forest Plan.

Telegraph Vegetation Project

In 2017, the Service and Forest consulted on the effects of the Telegraph Vegetation Project on grizzly bears. The Telegraph Project is located on the Helena Ranger District of the Forest, approximately 15 miles southwest of Helena and 5 miles south of Elliston, Montana. The project is intended to help meet goals and direction in the 1986 Helena Forest Plan, ensure diverse and sustainable forest stands and wildlife habitat in the future, improve conditions for fire suppression, recover economic value of dead and dying trees, and maintain and improve watershed values. Implementation of the Telegraph Vegetation Project will continue as planned under the 2021 Forest Plan.

Proposed vegetation treatments on 5,715 acres include regeneration harvest on 2,724 acres, intermediate harvest on 259 acres, precommercial thinning on 1,153 acres, prescribed fire on 1,079 acres, mechanical rearrangement of fuels on 344 acres, and whitebark pine release on 157 acres. Approximately 85.5 miles of road would be used as haul routes during project implementation. This includes road maintenance on 42.6 miles of road, reconstruction of 32.6 miles, construction of 0.7 mile of new road, and construction of 9.6 miles of temporary road. The project also includes rerouting approximately 920 feet of Ontario Creek and restoration of the Little Blackfoot River floodplain near the confluence with Ontario Creek. Additional project information can be found in the biological assessment prepared for the Telegraph Vegetation Project.

Other than access, no activities under the proposed action are likely to adversely affect grizzly bears (U.S. Fish and Wildlife Service 2017). We found that the adverse effects related to the existing, ongoing access conditions and temporary road construction and use were adequately analyzed in the 2014 programmatic biological opinion on the continued implementation of the Forest Plan and 2016 programmatic biological opinion on the Divide Travel Plan and the proposed actions related to access conform to the incidental take statements associated with those opinions. Thus, formal consultation for the Telegraph Vegetation Project was tiered to the consultations on the continued implementation of the Forest Plan and the Divide Travel Plan. Our finding was based on: (1) the baseline access condition falls within the scope of the programmatic biological opinions, (2) the effects of access management to grizzly bears are consistent with those anticipated and analyzed in the programmatic biological opinions, (3) the amount of incidental take anticipated in the incidental take statements in the 2014 and 2016

programmatic opinions will not be exceeded, and (4) the proposed action adheres to the appropriate terms and conditions associated with the reasonable and prudent measures identified in the 2014 and 2016 incidental take statements. Accordingly, the Telegraph Vegetation Project is consistent with the 2014 and 2016 programmatic biological opinions and incidental take statements.

In summary, we reviewed the revised biological assessment for the Telegraph Vegetation Project regarding the environmental baseline for the action area, the effects of the action, and the cumulative effects within the action area; the 2014 programmatic biological opinion on the continued implementation of the Forest Plan; the 2016 programmatic biological opinion on the Travel Plan; the information we relied upon to develop the 2014 and 2016 programmatic biological opinions; and information in our files. After our review of those documents and the status of grizzly bears, the environmental baseline, the effects of the action, and the cumulative effects, it was the Service's biological opinion that the Telegraph Vegetation Project is not likely to jeopardize the continued existence of grizzly bears.

Tenmile South Helena Vegetation Project

In 2018, the Service and Forest consulted on the effects of the Tenmile South Helena Vegetation Project on grizzly bears (Tenmile Project). The Tenmile Project includes activities on approximately 17,595 acres of Forest land. These activities include approximately 2,239 acres of regeneration harvest, 1,061 acres of improvement harvest, 353 acres of precommercial thinning, 1,950 acres of shaded fuel break treatments, 4,803 acres of private land buffer treatments, 7,189 acres of low-severity prescribed burn, 11 miles of temporary road construction followed by full obliteration, 21 miles or road reconstruction and/or reconditioning, 26 miles of road maintenance, 52 miles of road decommissioning, and 8 miles of road closure. All of these activities are described in detail in the biological assessment for the project. Implementation of the Tenmile Project will continue as planned under the 2021 Forest Plan.

Other than access, no activities under the proposed action are likely to adversely affect grizzly bears (U.S. Fish and Wildlife Service 2018). The effects of access management under the existing, baseline access condition in the action area and the construction of temporary roads were previously analyzed and consulted on in the 2014 programmatic biological opinion on the continued implementation of the Forest Plan and the 2016 programmatic biological opinion on the Divide Travel Plan. Thus, formal consultation for the Tenmile Project related to the baseline access condition and temporary road construction and use was tiered to the consultations on the continued implementation of the Forest Plan and the Divide Travel Plan. We found that the adverse effects related to the existing, ongoing access conditions and temporary road construction were adequately analyzed in those programmatic biological opinions and conform to the incidental take statements associated with those opinions. Our finding was based on: (1) the baseline access condition and temporary road construction falls within the scope of the programmatic biological opinions, (2) the effects of the existing, baseline access condition and temporary road construction are consistent with those anticipated and analyzed in the programmatic biological opinions, (3) the amount of incidental take anticipated in the incidental take statements will not be exceeded, and (4) the proposed action adheres to the appropriate terms and conditions associated with the reasonable and prudent measures identified in the incidental take statements. Accordingly, the portions of the Tenmile Project related to the baseline access condition and temporary road construction and use is consistent with the 2014 and 2016 programmatic biological opinions and incidental take statements.

The other effects related to access management, which include using 17.6 miles of closed roads, may result in additional adverse effects to female grizzly bears that may be using the action area and were analyzed in a site-specific biological opinion issued for the Tenmile Project. These effects would be temporary and access conditions would return to existing levels or better post project implementation. However, because ongoing adverse effects may already be occurring as a result of the existing, baseline condition and proposed temporary road construction, allowing a temporary increase in linear open and/or total road density related to the use of closed roads may temporarily increase the negative impacts in the action area. The use of these closed roads along with the temporary road construction would temporarily increase linear open and/or total road densities in the Black Mountain-Brooklyn Bridge, Jericho, and Quartz Creek elk herd units and may result in adverse effects to individual female grizzly bears, potentially disrupting normal breeding (or more specifically, cub rearing) or feeding patterns in the short-term, as a result of significant under-use of habitat by grizzly bears. Based on the best available information, the Service concluded that the Tenmile Project would not significantly affect the grizzly bear population.

Willow Vegetation Project

In 2019, the Service and Forest consulted on the effects of the Willow Vegetation Project on grizzly bears. The Willow Creek Project was developed to address insect and disease issues with project treatments that are intended to promote resiliency to insect and disease while provide for the retention of larger trees, helping to lower the risk of stand replacing wildfire. Proposed vegetation treatments include: 37 acres of intermediate harvest; 1,384 acres of regeneration harvest; 152 acres of precommercial thinning; and 617 acres of prescribed burning. Approximately 26.7 miles of road would be used as haul routes during implementation. This includes reconditioning of 5.2 miles existing road, 14.7 miles of reconstruction of secondary arterial roads, 3.1 miles of reconstruction of temporary roads, and new construction of 3.7 miles of temporary roads. In addition, approximately 9.9 miles of non-Forest roads may be used as haul routes. Road maintenance, including best management practices (BMPs) will also occur. All temporary roads will be obliterated within 3 years of construction, with all associated harvest activities completed prior to road obliteration. The remaining harvest and hauling activities would be completed within 4 years, while prescribed burning activities may be completed over a 10-year period. Additional project information can be found in the biological assessments prepared for the Willow Creek Project. Implementation of the Willow Vegetation Project will continue as planned under the 2021 Forest Plan.

Other than access, no activities under the proposed action are likely to adversely affect grizzly bears (U.S. Fish and Wildlife Service 2019a). We found that the adverse effects related to the existing, ongoing access conditions were adequately analyzed in the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan and the proposed actions related to access conform to the incidental take statement associated with that opinion. Thus, formal consultation for the Willow Vegetation Project was tiered to the programmatic consultation on the Blackfoot Non-Winter Travel Plan. Our finding is based on: (1) the baseline access condition falls within the scope of the programmatic biological opinion, (2) the effects of access management are consistent with those anticipated and analyzed in the programmatic biological opinion, (3) the amount of incidental take anticipated in the incidental take statement will not be exceeded, and (4) the proposed action adheres to the appropriate terms and conditions associated with the reasonable and prudent measures identified in the 2016 incidental take statement.

Accordingly, the Willow Vegetation Project is consistent with the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan and its incidental take statement.

In summary, we reviewed: the biological assessment for the Willow Vegetation Project regarding the environmental baseline for the action area, the effects of the action, and the cumulative effects within the action area; the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan; the information we relied upon to develop the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan; and information in our files. After our review of those documents and the status of grizzly bears, the environmental baseline, the effects of the action, and the cumulative effects, it was the Services biological opinion that the Willow Creek Project is not likely to jeopardize the continued existence of grizzly bears.

Wasson Vegetation Project

In 2019, the Service and Forest consulted on the effects of the Wasson Vegetation Project on grizzly bears. The Wasson Creek Project will treat 63 acres through commercial thinning of overstocked stands in order to improve forest health. The proposed activities, including haul routes, would use existing road templates. No temporary road construction, new road construction, or road reconstruction is required. Post-harvest units would receive follow-up treatment through a combination of prescribed fire treatments including: low-severity underburn, jackpot burning, and machine-pile burning. All activities are anticipated to be completed within 3 years. Additional project information can be found in the biological assessment prepared for the Wasson Creek Project. Implementation of the Wasson Vegetation Project will continue as planned under the 2021 Forest Plan.

Other than access, no activities under the proposed action are likely to adversely affect grizzly bears (U.S. Fish and Wildlife Service 2019b). We found that the adverse effects related to the existing, ongoing access conditions were adequately analyzed in the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan and the proposed actions related to access conform to the incidental take statement associated with that opinion. Thus, formal consultation for the Wasson Vegetation Project was tiered to the programmatic consultation on the Blackfoot Non-Winter Travel Plan. Our finding is based on: (1) the baseline access condition falls within the scope of the programmatic biological opinion, (2) the effects of access management are consistent with those anticipated and analyzed in the programmatic biological opinion, (3) the amount of incidental take anticipated in the incidental take statement will not be exceeded, and (4) the proposed action adheres to the appropriate terms and conditions associated with the reasonable and prudent measures identified in the 2016 incidental take statement. Accordingly, the Wasson Vegetation Project is consistent with the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan and its incidental take statement.

In summary, we reviewed: the biological assessment for the Wasson Vegetation Project, regarding the environmental baseline for the action area, the effects of the action, and the cumulative effects within the action area; the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan; the information we relied upon to develop the 2016 programmatic biological opinion on the Blackfoot Non-Winter Travel Plan; and information in our files. After our review of those documents and the status of grizzly bears, the environmental baseline, the effects of the action, and the cumulative effects, it was the Services biological

opinion that the Wasson Creek Project is not likely to jeopardize the continued existence of grizzly bears.

Middleman Project

In 2021, the Service and Forest consulted on the effects of the Middleman Project on grizzly bears. The Middleman Project includes activities on approximately 46,435 acres of Forest land. The treatment methods used and approximate acreage of each include timber harvest (1,238 acres), prescribed fire (44,759 acres), and precommercial thinning (438 acres). Road treatments associated with the Middleman Project include the construction of approximately 4.1 miles of temporary route segments. Temporary routes would be obliterated (restored to natural contours) upon completion of implementation. Approximately 21 miles of existing routes have been identified to facilitate the transport of timber (haul routes) and provide access for other mechanical equipment throughout the project area. The Kingsberry Road re-route includes new construction of approximately 0.26 mile and the decommissioning of approximately 0.30 mile of system road. Implementation of the project would occur over a period of about 15 to 20 years.

In addition to timber harvest, prescribed burn treatments, and associated road treatments the Middleman Project includes watershed improvement projects. Eight dispersed campsites within the Magpie and Avalanche drainages are proposed to be improved and stabilized to decrease erosion and sedimentation to streams. Associated unauthorized motorized routes impacting Avalanche Creek and Magpie Creek would be obliterated and restored. Stream and riparian restoration is proposed for Upper Trout Creek, including reducing erosion and sedimentation to the stream, restoring floodplain function, removing aquatic organism barriers, and improving riparian vegetation condition and extent. Ten active range allotments have livestock grazing that is impacting streams, wetlands, and riparian areas where range improvement activities will occur, including upland water developments, cattleguard placement, and riparian fencing. Shrub planting and bank stability treatments are components of the riparian fencing projects. The Middleman Project is also proposing the placement of beaver dam analog structures to mimic the presence of beaver dams to restore stream and riparian ecosystems. Six culverts would be upgraded, as funding allows, to large structures that would accommodate full aquatic organism passage and 100-year flow events. Additional culvert replacements would occur along haul routes in accordance with best management practices. Refer to the biological opinion on the Middleman Project for specific information on proposed actions (U.S. Fish and Wildlife Service 2021b). Implementation of the Middleman Project will continue as planned under the 2021 Forest Plan.

The effects of access management under the existing, baseline motorized access condition in the Middleman Project action area may adversely affect grizzly bears during project implementation at some point in the future if female grizzly bears begin to use the action area. These effects 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. Project effects related to access management, which includes using restricted/closed routes and temporary routes, may result in additional adverse effects to female grizzly bears that may be using the action area at some point during project implementation. These effects would be temporary as access conditions would return to pre-project conditions post-implementation. However, because adverse effects may already be occurring as a result of the existing, motorized access baseline condition, allowing additional, temporary impacts associated with motorized access may result in additional adverse effects to

grizzly bears that may use the action area during project implementation. In other words, some female grizzly bears that may use the action area in the future may experience displacement effects in some areas due to the under-use of suitable habitat as a result of the existing condition and may experience further avoidance as a result of the use of the temporary and/or restricted routes. With the exception of the potentially adverse effects related to motorized access, the remaining effects to grizzly bears as a result of the Middleman Project would be insignificant and/or discountable. Based on the best available scientific information reviewed in for the Middleman Project consultation, the Service concluded that the Middleman Project will not negatively impact the recovery of the NCDE grizzly bear population.

North Belts, South Belts, Little Belts, and Elkhorns travel plans
In 2021, the Service and Forest consulted on the effects of the ongoing travel plans for the northern portion of the Big Belt Mountains (North Belts), the southern portion of the Big Belt Mountains (South Belts), the Little Belt Mountains (Little Belts; including the Little Belts, Castle, and North Half Crazy Mountains), and the Elkhorn Mountains (Elkhorns) on grizzly bears. The North Belts, South Belts, Little Belts, and Elkhorns travel plans established motorized and non-motorized access management direction. The proposed action analyzed in this 2021 consultation included those components of the North Belts, South Belts, Little Belts, and Elkhorns Travel Plans that have yet to be implemented. The components of the travel plans that have already been implemented were considered as part of the environmental baseline. Refer to the biological opinion for specific details for each individual travel plan (U.S. Fish and Wildlife Service 2021c).

At some point in the future, if female grizzly bears begin using the travel plans action areas, the ongoing effects of the existing baseline motorized access conditions associated with the North Belts, South Belts, Little Belts, and Elkhorns travel plans may result in adverse effects to individual female grizzly bears as a consequence of the potential disturbance and/or displacement. Although the North Belts, South Belts, Little Belts, and Elkhorns travel plans may result in adverse effects to some individual grizzly bears at some point in the future, we do not anticipate that these effects will have appreciable negative impacts on the NCDE grizzly bear population. The action area is located completely outside the recovery zone. Even though areas outside the recovery zone are not necessary for the conservation of the species, they have been managed in such a way that have allowed grizzly bears to expand. Grizzly bears outside of recovery zones probably experience a higher level of adverse impacts due to land management actions than do grizzly bears inside. However, grizzly bears are able to live in habitat outside of the recovery zones despite lack of mandated habitat protections or direction specific to grizzly bear management. Although individual grizzly bears may be adversely affected at times related to the associated access management under the North Belts, South Belts, Little Belts, and Elkhorns travel plans, if and when female grizzly bears occur in the action area, we concluded that based on the best available scientific information reviewed in this consultation, such adverse effects will not negatively impact the recovery of the NCDE grizzly bear population. Further, we expect the North Belts, South Belts, Little Belts, and Elkhorns travel plans direction will result in conditions that support the use of NCDE zones 2 and 3 for dispersal or exploratory movements, and potentially some home range establishment at some point in the future, albeit at densities much lower than those in the recovery zone. Thus, it was our opinion that the North Belts, South Belts, Little Belts, and Elkhorns travel plans would not appreciably reduce the likelihood of both the survival and recovery of grizzly bears. Implementation of the North Belts,

South Belts, Little Belts, and Elkhorns travel plans will continue as planned under the 2021 Forest Plan.

Hogum Wildlife Resilience Project

In 2021, the Service and Forest consulted on the effects of the Hogum Wildlife Resilience Project (Hogum Project) on grizzly bears. The Hogum Project includes harvest treatments on approximately 1,061 acres using various treatment types including improvement cut, salvage cut, stand clear cut with leave trees, two-aged seed tree, two-aged shelterwood, roadside treatment, and public use post and pole. Logging systems include skyline and tractor harvesting methods. In addition, approximately 1,390 acres would receive prescribed burn treatments, including low severity and mixed severity treatments. Prescribed fire would be used as the primary treatment in some units and as secondary treatments within harvest units. Fuels remaining in units post-harvest will be treated through a combination of pile burning, broadcast burning, and jackpot burning.

The proposed action includes 30 miles of haul routes including construction of 10 miles of temporary roads, 9 miles of reconditioning existing open or closed roads, and 11 miles of reconstruction of existing road templates. Temporary road construction consists of new construction where there is no existing road template and the reconstruction of old roadbeds that are not system roads and are currently grown in with conifers. Road reconditioning allows for safe timber hauling while minimizing impacts to water resources. Road reconstruction may include more significant improvements such as realignment, curve widening, drainage structures, installation/upgrade of culverts or subgrade boulder or cobble excavation and removal. All temporary road segments including both new construction and reconstruction of existing road templates, would be constructed to the minimum standards necessary for log hauling and will be decommissioned within three years of construction. All system roads that will be reconditioned or reconstructed to be used as haul routes will be returned their pre-project motorized access status.

It is anticipated that all timber harvest will be completed within a 5-year period and burning of harvest units completed within 5 to 6 years. Prescribed fire only treatments are anticipated to be completed within 10 years. Refer to the biological opinion on the Hogum Project for specific information on proposed actions (U.S. Fish and Wildlife Service 2021d). Implementation of the Hogum Project will continue as planned under the 2021 Forest Plan.

The effects of access management under the existing, baseline motorized access condition in the Hogum Project action area may be affecting grizzly bears. These effects 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. Project effects related to access management, which includes using restricted/closed roads and temporary roads, may result in additional adverse effects to female grizzly bears that may be using the action area. These effects would be temporary as access conditions would return to pre-project conditions post-implementation. However, because adverse effects may already be occurring as a result of the existing, baseline condition, allowing additional, temporary impacts may result in additional adverse effects to grizzly bears that may be using the action area. In other words, some female grizzly bears using the action area may already be experiencing displacement effects in some areas due to the under-use of suitable habitat as a result of the existing condition and may experience further avoidance as a result of the use of the

temporary and/or closed roads. With the exception of the potentially adverse effects related to motorized access, the remaining effects to grizzly bears as a result of the Hogum Project would be insignificant and/or discountable. Based on the best available scientific information reviewed in for the Hogum Project consultation, the Service concluded that the Hogum Project will not negatively impact the recovery of the NCDE grizzly bear population.

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. Research has confirmed adverse impacts of motorized routes 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 effecting 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. Grizzly bears may 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 high motorized route densities 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 an 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 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 off 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. 2024a, Costello et al. 2024).

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, Schwartz et al. 2010, Gibeau et al. 2002, Wakkinen and Kasworm 1997, Mace et al 1996). This metric adequately represents the potential effects related to motorized access as it provides the spatial components of motorized routes and areas outside the influence of motorized routes (e.g. see Figure 7 in Proctor et al. 2019). Proctor et al. (2019) indicated that secure habitat may be as, or more, important than road density in predicting impacts to bears. The spatial arrangement of motorized routes and security areas may be critically important in terms of the degree to which bears may be affected by motorized access, stating, "…evenly spaced roads, even at an otherwise acceptable road density, can provide very little security in patches within the range of average daily movements" (Proctor et al. 2018). 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.

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*.). A study in the NCDE found female grizzly bears selected for and survived in home ranges with 56 percent secure habitat as compared to 30 percent secure habitat outside the composite female home range (Mace et al. 1996). Consistently, to the west, female grizzly bears selected and survived in home ranges with 55 percent secure habitat relative to 23 to 34 percent secure habitats in the greater area of the Purcell and Selkirks Mountains (Wakkinen and Kasworm 1997). Across the border in Canada, researchers found female grizzly bears selected and survived in secure habitats with 74 percent secure habitat as compared to available habitats with 56 percent secure habitat (Proctor et al. 2017). Based on grizzly bear habitat use data from the GYE, road densities and the amount of secure habitat within female home ranges had a large influence on their 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). Overall, both road density and the proportion of secure habitat contributed different yet important components influencing survival: road density had more influence on survival as the proportion of secure habitat within female home ranges decreased.

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 incidences, 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 Forest Service administered lands as a result of 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 (Costello et al. 2024, Kasworm et al. 2024a, Kasworm et al. 2024b, 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 is not likely to 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 indirect 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 or unauthorized 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.

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

As described above, the action area occurs both inside and outside of the NCDE grizzly bear recovery zone, in areas where grizzly bears may be present. Within the NCDE recovery zone, all

or portions of 16 grizzly bear subunits are located within the recovery zone portion of the action area (Table 1 above). The remainder of the Forest in the NCDE is located outside of the recovery zone, within 22 GBAUs (Table 2 above).

Within the recovery zone, research benchmarks for open motorized route density (OMRD), total motorized route density (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 1 above displays that all of the subunits meet these conditions related to OMRD and TMRD. Three of the subunits have less than 68 percent functioning as secure core (Heart Butte, Deep Creek, and Pine Butte). However, these subunits are 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 amount of motorized access that occurs on Forest lands is very low in these three subunits and the ongoing effects from motorized access associated with the Forest would be insignificant within these subunits. As all other subunits are better than the research benchmarks for OMRD, TMRD, and Secure Core, the ongoing effects associated with the existing motorized access conditions within the recovery zone are insignificant to grizzly bears. In other words, motorized access management within the portion of the action area in the NCDE recovery zone is not likely resulting in adverse impacts to grizzly bears. In addition, requirements included in the 2021 Forest Plan minimize the potential for adverse effects to grizzly bears. For example, PCA-NCDE-STD-03 relates to the baseline motorized access conditions and would result in no net decrease in secure core and no net increase in OMRD or TMRD within the recovery zone. Thus, current OMRD, TMRD, and secure core in the NCDE recovery zone would be maintained (or improved).

Forest Plan standard Z1-NCDE-STD-01 states that there shall be no net increase above the baseline in density (linear route density) of motorized routes open to public motorized use within NCDE zone 1. Thus, outside of the NCDE recovery zone, open linear route density within NCDE zone 1 would be maintained. Since the 2011 baseline must be maintained in NCDE zone 1, in order to construct permanent roads in these areas (not related to the limited allowable circumstances described below), other roads would likely need to be decommissioned. Such a change could result in effects to secure habitat (increase or decrease depending on location of changes). Motorized access management within these areas would be monitored and compared with the 2011 baseline motorized access conditions, as described in the NCDE conservation strategy and the 2021 Forest Plan. 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. The existing motorized access conditions throughout the portion of the action area outside of the recovery zone, including NCDE zones 1, 2, and 3, may result in some level of ongoing affects, including some adverse effects, which may continue during the life of the 2021 Forest Plan.

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 motorized access management as described above (i.e. NCDE zone 1) 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. Secure habitat metrics are based on motorized route information.

Outside of the recovery zone, the remaining portions of the Forest have been delineated into GBAUs. Table 2 displays the existing secure habitat for the GBAUs outside of the recovery zone within the action area. The mileage, location, and timing of public motorized travel across the Forest is determined by travel plans, which are already in place and will not change as a result of the 2021 Forest Plan. The existing motorized access conditions were determined using the best available information. The metrics described here represent the existing motorized access conditions as reviewed, although the Service recognizes that improved information may be documented and modeling and calculation errors can occur. The Forest is expected to update the secure habitat metrics as they update their access data during site-specific project planning. These updates are not a result of changes on the ground. As the access database is updated, the improved information will better reflect the existing conditions related to motorized access and secure habitat in the GBAUs. If the Forest finds that it has new information or has made a modeling 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.

As described above, there is no universally accepted minimum patch size for secure habitat outside of recovery zones. Although research benchmarks are established for recovery zones, these vary greatly and there are no specific benchmarks available for the areas outside of the recovery zones. Secure habitat in the action area outside of the recovery zone was defined as patches of at least one acre rounded to the nearest whole acre number that are farther than 500 meters from any road or trail open to any type of motorized use at any time of the year (Interagency Grizzly Bear Committee 1998, Gibeau et al. 2001, Schwartz et al. 2010, Proctor et

al. 2018). The biological assessment further displays the amount of secure habitat within the GBAUs that have a patch size of at least 2,500 acres (U.S. Forest Service 2025).

Portions of the action area outside of the recovery zone have high levels of motorized access while other portions have low levels of motorized access or no motorized access at all. Outside of the recovery zone, the estimated amount of secure habitat on Forest land ranges from a low of 15 percent in the Sheep Creek GBAU to a high of 63 percent in the Snowies GBAU. Of all 22 GBAUs, one has less than 20 percent secure habitat on Forest land, three have between 20 and 29 percent secure habitat on Forest land, eight have between 30 and 39 percent secure habitat on Forest land, six have between 40 and 49 percent secure habitat on Forest land, two have between 50 and 59 percent secure habitat on Forest land, and two have 60 percent or greater secure habitat on Forest land. While we do not have specific thresholds for determining effects associated with the amount of secure habitat in the GBAUS, 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.

In addition, since the Forest lacks inventory information and has no management authority over non-Forest lands, a 500-meter buffer was placed on 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 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 of non-Forest land 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 occur from actions on non-Forest lands that may affect secure habitat metrics on 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 and National Marine Fisheries 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 modeling 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.

As previously mentioned, permanent route construction within the recovery zones and NCDE zone 1 is limited by standards. Since the 2011 baseline must be maintained, in order to construct permanent routes in these areas (not related to the limited allowable circumstances described for NCDE zone 1), other roads would likely need to be decommissioned. Permanent route construction is not limited within NCDE zones 2 and 3 of the Forest. The Forest anticipates that up to 15 miles of permanent routes may be constructed across the Forest over the life of the plan. They base this estimate on the fact that the Forest has built very few permanent routes over the last several years. It is likely that new permanent routes would replace old routes that would subsequently be obliterated. As such, in most situations, new permanent route construction would not likely result in a net increase in permanent route miles. Existing routes that are no longer needed would continue to be removed from the landscape. Thus, it is probable that a decrease in miles of permanent route would occur over the life of the 2021 Forest Plan (U.S. Forest Service 2025). Any new permanent roads are likely to replace old roads that would subsequently be obliterated. Also, many of the existing roads that are no longer needed would continue to be removed from the landscape. Thus, it is likely that in most situations new permanent road construction would not result in a net increase in permanent road miles. While unlikely, permanent road construction is allowed in NCDE zones 2 and 3 and may result in some level of effects, including the potential for adverse effects.

The potential effects of permanent route construction on secure habitat depend entirely on the location of the new route and the existing secure habitat polygons. For example, a permanent road could be constructed completely outside of secure habitat, as well as the 500-meter buffer, and would have no effect on secure habitat. A different example could include permanent route construction through the middle of a secure habitat polygon, potentially resulting two polygons of habitat that no longer provide secure habitat (depending on size, etc.). Other examples of permanent route construction would result in effects that fall somewhere in between these two examples. Thus, we cannot reasonably estimate the impacts that future permanent motorized route construction would have on secure habitat and site-specific analyses would need to occur for any permanent motorized route construction that may be proposed in the future.

Vegetation 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 2021 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.

The 2021 Forest Plan establishes standards that would apply to the use of temporary routes for project implementation within the recovery zone that may temporarily impact OMRD, TMRD, and secure core (PCA-NCDE-STD-04). The standard allows projects to temporarily increase OMRD by 5 percent, temporarily increase TMRD by 3 percent, and temporarily decrease secure core by 2 percent. PCE-NCDE-STD-01 requires that in each subunit, temporary changes in OMRD, TMRD, and secure core shall be calculated for roads used for projects during the non-denning season. Calculations will include estimated changes for each year of the anticipated duration of the project and shall be incorporated into the 10-year running average required by standard NCDE-STD-AR-03.

Also, within the recovery zone, PCA-NCDE-STD-02 requires that administrative use on roads with public restrictions 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 include emergency situations. PCA-NCDE-STD-05 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 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.

Temporary road construction and/or use within the recovery zone would be managed via these standards and would be expected to meet these standards. 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 (PCA-NCDE-GDL-01). Further, guideline PCA-NCDE-GDL-02 ensures that pre-project conditions (i.e., OMRD, TMRD, secure core) would be restored within 1 year of project completion. While projects meeting these standards and 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 2012 planning rule allows the Forest to deviate from guidelines so long as they meet the purpose of the guidelines, it is not known at this time what other scenarios may be used to meet the purpose of these guidelines. Thus, these guidelines, as written, will be used for the effects analysis. If the purpose of the guidelines are met in a different way, site-specific consultation may be necessary depending on the site-specific information and effects.

Depending on the location, timing, and duration, the allowance of temporary changes in motorized access conditions within the 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 existing access condition of the project subunit and the potential temporary effects to the access metrics. The extent of area on the Forest that could be affected is limited. While temporary effects to secure core would be allowed, the ability to conduct projects within secure core will be constrained in most areas by overlapping designated wilderness, proposed wilderness, inventoried roadless areas, and other forest plan management area designations that restrict road development. The Forest has about 845,000 acres of secure core, of which about 821,000 acres are in wilderness or roadless areas (97 percent), meaning that only approximately 3 percent of the Forest's secure core occurs in areas that even allow road access. Further, the Rocky Mountain Front Heritage Act described above will continue to limit construction and use of temporary roads.

The amount of temporary road outside of the recovery zone, within NCDE zones 1, 2, and 3, is not limited. 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 temporarily reduce the effectiveness of the existing secure habitat. Given the variation in individual projects, the potential effects of 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, 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 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 routes are built directly within secure habitat; thus, affecting a secure habitat polygon. Depending on the site-specific circumstances of the new temporary routes as described above, the new routes may or may not affect secure habitat and potential effects to grizzly bears would range from insignificant to adverse.

The Forest looked at vegetation management projects over the past 8 years within NCDE zones 1, 2, and 3 and found that approximately 98 miles of temporary roads were constructed or proposed to be constructed. With all but 4 miles occurring outside existing secure habitat, the analysis showed that most temporary roads tend to occur in proximity to existing motorized routes and not within 500 meters of secure habitat. Based on this analysis, the effects of temporary project roads (new construction or use of restricted roads) would not likely be separate or distinguishable from the effects of the existing motorized access conditions already on the landscape. Using this information, the Forest estimated that secure habitat may be temporarily impacted by the construction of temporary project roads or temporary use of restricted roads by an average of 2.5 percent and no more than 7 percent at any given time in any individual GBAU over the life of the 2021 Forest Plan. The temporary changes in the effectiveness of secure habitat, which may occur during implementation of vegetation management projects, would not likely occur in more than 6 GBAUs in total during that time and likely in no more than 2 adjacent GBAUs concurrently. Over the longer term, after project completion, the amount of secure habitat affected by these projects will return to pre-project levels.

Depending on the site-specific project information (size, location, duration, etc.), effects associated with 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. Such impacts would be localized and likely separated in space and time. The effects of displacement and under-use of habitat related to motorized access (including the existing motorized access conditions, the potential 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 in the recovery zone and NCDE zone 1 to very low or none in portions of NCDE zones 2 and 3. 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 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. Further, in some areas where transient males have been verified, no female grizzly bears have been verified. While we do not expect adverse 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 GYE were male, and males make up most of the known occurrences in this region (Mace and Roberts 2012). 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, temporary motorized 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 2021 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 finding shelter. We do not expect that all existing routes, new temporary routes, 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 areas that have motorized access conditions that are worse than the research benchmarks (Kasworm et al. 2024a, Costello et al. 2024). The level of effects would depend on such things as grizzly bear use in the action area, location of the route(s), length of the route(s), timing of use, the frequency and intensity of use, and the duration the route(s) would be on the landscape, in relation to those factors listed above for effects of motorized routes. 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 bears into a smaller area. Other routes 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 ongoing adverse effects to grizzly bears. We conservatively include the potential for adverse effects in these areas due to the long timeframe that the 2021 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 routes or temporary use of restricted routes.

In sum, ongoing effects from existing motorized access conditions and new effects from 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 motorized access under the 2021 Forest Plan will result in adverse effects. We anticipate that the ongoing adverse effects from existing motorized access conditions and new effects from 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 2021 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. Motorized access conditions will be further analyzed for site-specific actions, with some effects tiered to this consultation when applicable.

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 may 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 Winter Motorized Use in the Action Area

Winter recreation primarily occurs during the grizzly bear denning season. The mileage, acreage, location, and timing of winter motorized over-snow travel is determined by the travel plans, which are in place across the Forest and will not change as a result of the 2021 Forest Plan. Thus, the amount and timing of winter motorized use would remain the same under the 2021 Forest Plan as the existing, baseline condition. Late season snowmobile 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.

Under the existing condition, more than half (approximately 56 percent) of the action area within the recovery zone is within designated wilderness, where over-the-snow motorized travel is prohibited. Within the Rocky Mountain Range GA, winter motorized travel is allowed only on main access roads (none of which are within modeled grizzly bear denning habitat) and approximately 30,000 acres (approximately 8,000 acres overlap with modeled denning habitat). Thus, the snowmobile use within denning habitat in the Rocky Mountain Range GA is limited to relatively small portions of four subunits (Teton, Pine Butte, West Fork Beaver, and South Fork Willow). Snowmobile use within the Rocky Mountain Range GA is prohibited after March 31.

Within the Upper Blackfoot GA, snowmobiling is allowed on about 53,000 acres (approximately 6,400 acres overlap with modeled denning habitat) within the recovery zone. This snowmobile use occurs within all three subunits within the Upper Blackfoot GA (Alice Creek, Arrastra, and Red Mountain). Snowmobile use within the recovery zone portion of the Upper Blackfoot GA is prohibited after March 31 with the exception of the Copper Bowls play area where snowmobile use is allowed until May 31. The Copper Bowls play area does not affect OMRD because the access to this area is on a yearlong open road. No restricted roads are used to access this extended use area. Within the Copper Bowls extended use area, 1,891 acres are designated as secure core, consequently resulting in a decrease in the effectiveness of secure core during a small portion of the non-denning period (from April 1 up to May 31). Although these 1,891 acres of secure core in the Copper Bowls extended use area may be compromised for a short period of time, they remain designated as secure core and will continue to provide secure core during the remainder of the non-denning period. Within the Copper Bowls extended use area, approximately 691 acres overlap with modeled denning habitat.

The NCDE grizzly bear amendment, which was incorporated into the 2021 Forest Plan, included a plan component to cap the amount of area available to motorized over-snow travel in modeled denning habitat within the PCA (recovery zone) during the den emergence period. No net increase in the percentage of area or mile of routes designated for motorized over-snow vehicle use can occur on the Forest within the recovery zone during the den emergence time period.

Within the portion of the action area outside of the recovery zone, the timeframe for winter motorized use varies. In the portion of the Upper Blackfoot GA outside of the recovery zone and north of Highway 200 (specifically within portions of the Dalton Mountain GBAU) areas open to snowmobiling through March 31 occur on approximately 1,800 acres. This use overlaps with approximately 4 acres of modeled denning habitat. Elsewhere in the Upper Blackfoot GA in areas south of Highway 200 (including portions of Dalton Mountain and Humbug GBAUs) areas are open to snowmobiling through April 15 on approximately 70,000 acres; roughly 7,600 of those acres overlap modeled denning habitat.

For the GBAUs across the remaining portions of the Forest, the dates during which over-snow motorized travel is allowed vary from yearlong to ending on May 15. Snowmobile use that extends beyond March 31 overlaps with approximately 112,535 acres of modeled denning habitat. Many areas on the Forest are relatively dry and snow can be intermittently present. Thus, not all areas legally open to over-snow motorized travel are actually available during the entire time they are open.

The primary concerns with winter motorized use 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 snowmobiling would not overlap with these seasons. 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 2022). 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. 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 winter motorized use 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 effects during this time would not reach levels that would be significant to individual 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 (Mace and Waller 1997). 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, very little potential for conflict with winter motorized use exists.

Snow conditions within portions of the action area are often suitable for winter motorized 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 travel plans that would not change under the 2021 Forest Plan, areas with extended winter motorized use seasons (after April 1) would occur. Therefore, the potential exists for interactions between snowmobiles and grizzly bears that have recently emerged from their dens. As previously mentioned, approximately 691 acres of modeled denning habitat overlap areas open to late season (after March 31) winter motorized use within the recovery zone. Outside of the recovery zone, approximately 120,135 acres of denning habitat overlap areas open to late season winter motorized use. However, for reasons previously mentioned, not all areas legally open to over-snow motorized travel are actually available during the entire time they are open due to such things as ruggedness of the terrain, dense forest conditions, or logistical limitations (e.g., fuel). In addition, some areas may not be available to late season over-snow vehicle use due to a lack of snow in areas that may be drier and lower elevation.

Disturbance from winter motorized use is likely most consequential shortly before or after den emergence, particularly to females with cubs. 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, they may become stranded in deep snow, or the family group may be pushed to less suitable habitat. Thus, potential disturbance during this time may reach levels that may be significant to adult female grizzly bears 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 winter motorized use to be significant to male grizzly bears or female grizzly bears without cubs.

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).

As reported earlier, timing of den exit by grizzly bears was similar between the major studies in the NCDE: median date of exit was April 7 on the east side (Aune and Kasworm 1989); April 14 in the Swan Mountains (Mace and Waller 1997), and early April in the Mission Mountains (Servheen and Klaver 1983). Females with cubs (those pregnant upon den entry – as opposed to females with young who enter their dens with cubs-of-the-year or older) emerge later than other sex and age classes (Aune and Kasworm 1989; Mace and Waller 1997). Females with newly born cubs also spent more time in the vicinity of the den (with cubs) after emergence.

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 winter motorized use would be permitted after March 31 in some areas, spring snowmobiling areas and spring grizzly bear habitat are almost mutually exclusive in that the areas that would be suitable for spring snowmobiling (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.

General Effects of Mechanized Equipment

Project-related activity often includes the use of mechanized equipment. Such use could occur on the Forest for a variety of activities, including but not limited to: vegetation management, wildland and prescribed fire management or suppression actions, invasive weeds treatment, species reconnaissance (e.g., population counts), military operations, recreation special uses, minerals, oil, and gas exploration, or other emergency responses (e.g., flooding). Other uses for off-road mechanized equipment may not be included here or known at this time that could during the life of this analysis.

The use of mechanized equipment may elicit a response in grizzly bears. Effects are expected to be similar to effects of motorized routes and may range from a simple awareness, short-term disturbance or flight response, or displacement from an area. Mechanized equipment use that is short in duration and low in frequency, would not likely result in significant affects to grizzly bears. Extended mechanized equipment use could interfere with the normal behavior patterns of grizzly bears depending on location. With the exception of recurring long-term mechanized equipment use, grizzly bears would likely return soon after the disturbance has stopped. If such

use continues into multiple seasons, the effects upon grizzly bear behavior (i.e., avoidance and more than just temporary disturbance) may become more substantial.

When considering long-term habitat effects, mechanized equipment use does not use or require roads and may not pose the same chronic displacement effects or mortality risks that roads-based operations do. Such use is a temporary event, whereas roads can be features on the landscape long after a project is complete. Consequently, while short-term activities using mechanized equipment may impact grizzly bears, they do not impart the same chronic habitat effects as roads.

The effects to grizzly bears from mechanized equipment use that occurs on or adjacent to motorized routes would likely be offset by the existing under-use of habitat by grizzly bears in the immediate vicinity of the motorized routes due to the "avoidance" by grizzly bears of habitat in close proximity to motorized routes. In many cases, the effects of mechanized equipment use that occurs in roaded habitat would be insignificant to grizzly bears. Mechanized equipment use in areas of secure habitat, away from roaded habitat, could result in significant effects to grizzly bears adapted to using more secure habitat, depending on location, duration, and timing, among other things.

It is not possible to quantify the amount of mechanized equipment use over the life of the Forest Plan, but such use is expected to continue and potentially increase. The duration of use 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 with the frequency varying from one single use of relatively short duration to repeated use over the same area. Thus, effects to grizzly bears will vary considerably from insignificant to adverse depending on the duration, frequency, location, and timing of mechanized equipment use. Any potential for project-specific effects associated with mechanized equipment use will be analyzed during site-specific consultation.

General Effects of Aircraft Use

The use of aircraft, including helicopters, has occurred and is likely to continue to occur on the Forest associated with several activities. Low-elevation aircraft flights (less than 500 meters above ground level; AGL) occur on the Forest for a variety of activities, including but not limited to: vegetation management, wildland and prescribed fire management or suppression actions, invasive weeds treatment, species reconnaissance (e.g., population counts), military operations, recreation special uses, minerals, oil, and gas exploration, or other emergency responses (e.g., flooding). Increasing numbers of activities are using UAS, such as drones, in addition to helicopters and fixed-wing aircraft. Permitted outfitters or filmmakers may use UAS to record and create media. Wildland fire teams, biologists, and other specialists may use low-level aircraft technology to collect habitat, vegetation, or fire data at any time of the year. Many uses for low elevation aircraft and UAS that may not be disclosed in this document could happen during the life of this analysis.

The Montana/Northern Idaho Level 1 Terrestrial Biologist team assembled a guidance document (Montana/Northern Idaho Level 1 Terrestrial Biologists Team 2009) to provide additional information and improve consistency for estimating effects and potential minimization criteria to reduce disturbance to grizzly bears from helicopters. The guidance to the effects of helicopters on grizzly bears identify the potential for disturbance by recurring low-elevation (<500m)

helicopter flights. This document also identifies and provides management guidance for several factors that influence grizzly bears including potential disturbance and displacement from habitat. This document is currently under revision, which will incorporate the best available science associated with effects from low-level flights from aircraft and drones. Once available, this updated guidance document will be used in future project-level analyses.

Science on effects to grizzly bears on low-elevation aircraft (including UAS) is not well established and much of the research (which also includes captive and wild black bears and polar bears) on aircraft and UAS describes various levels of disturbance, movement, or escape behaviors (Harding and Nagy 1980, Interagency Grizzly Bear Committee 1987, Aune and Kasworm 1989, McLellan and Shackleton 1989, Larkin et al. 1996, Stoen et al. 2010, Barnas et al. 2018, Deacy et al. 2019, Quigley et al. 2024), physiological changes (such as elevated heart rates in black bears) (Ditmer et al. 2015), or habituation due from frequent human disturbance (McLellan and Shackleton 1989, Ditmer et al. 2019).

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. Aircraft use that is short in duration and low in frequency, would not likely result in significant affects to grizzly bears. Extended aircraft use with multiple passes could interfere with the normal behavior patterns of grizzly bears. With the exception of recurring long-term aircraft use, grizzly bears would likely return soon after the disturbance has stopped. 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.

When considering long-term habitat effects, aircraft use does not use or require motorized routes and may not pose the same chronic displacement effects that motorized routes do. Aircraft use is a temporary event, whereas motorized routes can be features on the landscape long after a project is complete. Consequently, while short-term aircraft activities may impact grizzly bears, they do not impart the same chronic habitat effects as motorized routes. Thus, the use of aircraft can reduce impacts to grizzly bears where such use reduces or eliminates the need for new motorized routes, which have longer-term effects.

The effects to grizzly bears from repeated, low altitude flight paths that follow open motorized routes may be partially offset by the existing under-use of habitat in the immediate vicinity of the motorized route due to the “avoidance” by grizzly bears of habitat in close proximity to open motorized routes. In many cases, the effects of aircraft use that occurs in roaded habitat would be insignificant to grizzly bears. However, aircraft use in secure areas that are not highly roaded could result in significant effects to grizzly bears adapted to using more secure habitat, depending on duration and timing.

It is not possible to quantify the amount of low-elevation flights from both aircraft and drone use over the life of the Forest Plan, but the use of aircraft is expected to continue and potentially increase. 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 with the frequency varying from one single trip of relatively short duration (such as a single administrative site

repair, population survey, or other similar actions) to repeated trips over the same area (as during wildland fire events, prescribed fire ignitions over multiple days, and others). Thus, effects to grizzly bears will vary considerably from insignificant to adverse depending on the duration, frequency, location, and timing of low-elevation aircraft and UAS use. Any potential for project-specific effects associated with aircraft use will be analyzed during site-specific consultation.

Effects of Non-motorized recreation

Recreation settings are categorized into six Recreation Opportunity Spectrum (ROS) classes ranging from 'primitive' (e.g., designated wilderness, recommended wilderness areas, and others) to 'rural' (e.g., areas immediately adjacent to small communities or private land inholdings, and others), to 'urban'. ROS categories provide some indication of the overall amount of area in which general types of recreation are allowed. Table 15 in the 2025 biological assessment displays the acreage of ROS categories by GA under the 2021 Forest Plan, with the exception of urban as no areas on the Forest meet the definition of urban (U.S. Forest Service 2025).

The 2021 Forest Plan designates two recreation areas: the South Hills Recreation Area (within NCDE zone 2) and the Grandview Recreation Area (outside of area where grizzly bears may be present). Both areas include desired conditions to offer dispersed, non-motorized recreation opportunities. In the South Hills Recreation Area, mountain bike use would only be suitable on established roads and trails. The 2021 Forest Plan also identifies 64,983 acres of recommended wilderness within the area where grizzly bears may be present, increasing the amount of recommended wilderness by about 30,805 acres within this area. Other recommended wilderness areas are identified but are located outside of where grizzly bears may be present. Recommended wilderness areas are to be managed to retain characteristics that would allow them to become designated wilderness in the future, should Congress decide to do so. Tables 3 and 17 in the 2025 biological assessment display the previously recommended wilderness and the recommended wilderness under the 2021 Forest Plan (U.S. Forest Service 2025).

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. In most situations, effects 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 (no known moth aggregation sites occur on the Forest). 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.

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.

Similarly, we do not anticipate adverse impacts to grizzly bears associated with non-motorized use during the winter. This use may include cross country skiing, ski touring, winter hiking, dog sledding, fat-tire biking, trapping, hunting, and fishing, among others. 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. Effects associated with winter non-motorized activity across the Forest are expected to be discountable or insignificant depending on location and timing.

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 and Dispersed Recreation 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, trailheads, rental or permit cabins, lodges, ski areas, fire lookouts, 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. The Forest has a total of 215 developed recreation sites (not including permit cabins and lodges) spread across the action area, including but not limited to boating access points, interpretive pullouts, campgrounds, and trailheads. Of these, a total of 21 developed recreation sites that allow public overnight use (rental cabins, campgrounds), 99 permitted recreation residence cabins, and 4 permitted commercial lodges occur on the Forest within the recovery zone. The 2021 Forest Plan include limits within the recovery zone on the number and capacity of developed sites that are available to the public for overnight use (PCA-NDCE-STD-06).

Dispersed recreational opportunities also occur throughout the Forest and are largely composed of dispersed camping along trails and roads. Dispersed recreation occurs across much of the Forest, but typically occurs in close proximity to roads. 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.

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. The 2021 Forest Plan has several measures to continue to manage food and attractants. These are described in the biological assessment and include: FW-NCDE-STD-02, PCAZ1Z2-NCDE-STD-01, PCAZ1Z2-NCDE-STD-02, PCAZ1-NCDE-STD-01, PCAZ1-NCDE-STD-02, PCAZ1-NCDE-STD-08, and PCAZ1-NCDE-GDL-01 (U.S. Forest Service 2025). A Forest-wide guideline relevant to food and attractant storage in all portions of the action area (FW-WL-GDL-02) is also part of the 2021 Forest Plan. These 2021 Forest Plan components not only implement food and attractant storage requirements, but also additional measures to ensure that permittees using Forest lands adhere to those orders and in some circumstances take additional steps to minimize the risk of grizzly bear-human conflicts. In addition, to these standards and guidelines, two Food Storage Special Orders are in place across the Forest and are expected to continue to be in place during the life of the 2021 Forest Plan. All users throughout the action area are required to adhere to the food storage orders and guidelines. The Forest-wide Food Storage Orders are an important conservation action that has reduced the potential for human-bear conflicts and mortality risk. Although the Food Storage Orders expire during the life of this consultation, 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.

Since implementation of the first food storage order on the Forest, only one known instance of a management removal or death of a grizzly bear due to improperly stored attractants has occurred on the Forest. A grizzly bear on the Rocky Mountain ranger district got into improperly/illegally stored horse feed at a hunting camp in late 1999, and subsequently caused damage to several hunting camps and Forest tack sheds in the area. Attempts to trap the bear that year were unsuccessful. The same bear broke into the Green Fork administrative cabin in the Scapegoat Wilderness the following year (fall 2000) and was trapped and euthanized.

With proper food and attractant storage on the Forest, 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 only 1 grizzly bear removal over 20 years ago 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 storage special 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.

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). Grizzly bears that kill livestock include a range of ages and both sexes (Ibid.). 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 foraging 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 a predictable pattern or a consistent response.

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, 7 killed sheep, 5 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 may cause an increased potential for bear-human conflicts. Once a bear successfully obtains a food reward at a particular location, the site is usually periodically rechecked for more food (Meagher and Phillips 1983, Wilson et al. 2005).

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 its 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 may not 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."

Grizzly bears are opportunistic omnivores that use a wide variety of plant and animal food sources. Natural foods can vary significantly within seasons and from year to year due to adverse or extreme weather conditions. However, grizzly bears consume a wide variety of vegetation, roots, tubers, and other foods not consumed by domestic ungulates, and exhibit plasticity in their ability to switch between food resources. Based on this, we expect any competition for forage between livestock and grizzly bears, and impacts from such, to be minimal. Although competition for natural forage may be minimal, adding livestock to the landscape is a habitat modification (potential food source).

Effects of Livestock Grazing in the Action Area

The Forest has 240 active grazing allotments. Of these, 5 are active sheep allotments with 3 in the Upper Blackfoot GA (within both the recovery zone and NCDE zone 1) and 2 in the Big Belts (within NCDE zone 2). Table 3 displays these allotments by GA. The 2021 Forest Plan would not change the number and location of livestock allotments nor the number and type of animals allowed to graze on these allotments. As previously explained, the specific numbers of animals grazing on any given allotment, along with timing and duration of use, are established annually in Annual Operation Plans and vary from year to year. The location, size, or management of grazing allotments would not be affected by the 2021 Forest Plan and any changes would be addressed through site or area specific range analyses.

The 2021 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 2021 Forest Plan components related to livestock grazing management and are described fully in the biological assessment (U.S. Forest Service 2025): PCAZ1-NCDE-STD-01, PCAZ1-NCDE-STD-02, PCAZ1-NCDE-STD-03, PCAZ1-NCDE-STD-04, PCA-NCDE-STD-10, PCA-NCDE-STD-11, and PCA-NCDE-GDL-09. In summary, these standards and guideline incorporate requirements into new or reauthorized grazing permits that reduce the risk of grizzly bear-human conflict and require reporting of livestock carcasses within 24 hours of discovery within the recovery zone and NCDE zone 1, prohibit increases in the number of sheep allotments or permitted animal unit months above the baseline within the recovery zone and NCDE zone 1, reduce the number of sheep allotments when opportunities arise in the recovery zone, limit potential conflict associated with weed control via small livestock within the recovery zone and NCDE zone 1, and prohibit increases in the number of active cattle grazing allotments in the recovery zone. These standards and guideline do not apply to the portions of the action area within NCDE zones 2 and 3.

Livestock grazing may indirectly result in adverse effects to grizzly bears by modifying natural feeding behavior to the point where livestock conflicts and/or depredations by grizzly bears occur. In other words, as a result of livestock grazing, grizzly bears may become food conditioned to seek out livestock as prey. Such grizzly bear conflicts and/or depredations of livestock may result in the relocation of problem bears or may result in direct mortality through management removal of individual grizzly bears that prey on livestock.

No documented grizzly bear mortalities associated with livestock have occurred within the action area. Based on the information for livestock grazing in the action area (the small number of sheep allotments, the standards within the recovery zone and NCDE zone 1, and the history of no grizzly bear mortalities associated with livestock), the likelihood of adverse impacts to grizzly bears related to livestock grazing in the action area during the life of the 2021 Forest Plan is low, but cannot be ruled out. Due to the long duration of the 2021 Forest Plan, the number of grizzly bears using the action area is expected to increase and livestock grazing will remain a potential risk.

In summary, livestock management in the action area, especially if sheep allotments are added in NCDE zones 2 and/or 3, has the potential to result in adverse impacts to grizzly bears if livestock/grizzly bear conflicts occur. Grizzly bears may become food conditioned/habituated and seek out livestock as prey, which may result in the removal of grizzly bears.

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 does exist but is low as we would typically expect bears to leave in advance of an approaching fire. 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 effects of motorized use on grizzly bears. The effects of motorized access are discussed above in the '*General Effects of Motorized Access on Grizzly Bears*' and the '*Effects of Motorized Access in the Action Area*' sections above. Further, the use of aircraft and mechanized equipment may also be used in vegetation and fire management activities. The effects of aircraft and mechanized equipment are discussed above in the '*General Effects of Motorized Access on Grizzly Bears*' section 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).

Effects of Vegetation and Fire Management in the Action Area

The 2021 Forest Plan established active vegetation management as an appropriate tool with which to achieve desired vegetation and habitat conditions in the action area. The current environmental baseline provides a variety of bear foods while maintaining a mosaic of food and cover. Vegetation treatment, including prescribed fire, is encouraged to improve habitat for various wildlife species and groups. Harvesting within the action area will be used as a tool 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 2021 Forest Plan components related to vegetation and fire management are described fully in the biological assessment (U.S. Forest Service 2025). 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 direction, including standards regarding motorized route density and food storage orders.

Under the 2021 Forest Plan, approximately 368,814 acres (13 percent of the action area) would be suitable for timber production (the purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use). Areas that are not suitable for timber production include such things as Recommended Wilderness Areas, eligible wild and scenic river corridors, riparian management zones, certain cultural and historical sites, and some others. In addition, lands with marginal timber growth potential based on landscape or vegetation characteristics, areas with limited access (including, for example, most areas identified with 'Primitive' or 'Semi-primitive non-motorized' Recreation Opportunity Setting categories), or areas with certain other management emphasis are not included in the lands suitable for timber production.

Harvest for other multiple use values and purposes could occur on approximately 1,674,482 acres (58 percent of the action area) that are not suitable for timber production. Inventoried Roadless Areas make up a majority of lands that are unsuitable for timber production but where

some harvest may occur. The acreage available for harvest but unsuitable for timber production in areas outside of the Inventoried Roadless Areas is approximately 561,696 acres (19 percent of the action area).

Timber harvest models run predictions based on decades rather than estimating the amount during the life of the plan. Under the 2021 Forest Plan, it is estimated that 2,279 acres of harvest would occur per year over the first 10 years after plan implementation. It is also estimated that 2,709 acres of harvest would occur per year during the second decade after plan implementation. More than half of these harvest acres are predicted to occur on lands identified as suitable for timber production. These acres also include projects proposed for fuels reduction. The Forest estimates that approximately 3,165 acres of prescribed burning will occur per year in the first decade after implementation and up to 3,565 acres per year in the second decade.

The Forest has provided model estimates of the total likely acreage that might be affected by wildfire per decade. The modeling estimates that approximately 195,000 acres may be affected by wildfire over the next decade under the 2021 Forest Plan or under continuation of existing management. It is important to note that this is just an estimate and the actual acres affected by wildfire will be highly variable and not influenced to any real extent by forest management under the 2021 Forest Plan. 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.

Future proposed vegetation management actions are expected to provide sufficient habitat for grizzly bears, such as cover, forage, and denning among others. We expect that forest, grassland, shrubland, and riparian habitats would be managed to provide early, mid, and late successional vegetation stages. Every proposed vegetation and/or fire management project within the action area would consider potential effects to grizzly bears during the site-specific project analysis process. Site specific project analysis will determine the type and extent of vegetation treatments and the potential effects to grizzly bears.

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. Based on decades of previous consultation, the effects of vegetation and fire management actions proposed under the 2021 Forest Plan 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 management activities such as temporary route construction, temporary restricted route use, mechanized equipment use, or aircraft 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 these activities are discussed generally in the '*General Effects of Motorized Access on Grizzly Bears*' section above and temporary route construction and temporary restricted route use are discussed in more specific detail in the '*Effects of Motorized Access in the Action Area*' section above. Potential effects that may occur as a result of temporary route construction and use, temporary restricted route use, mechanized equipment use, and/or aircraft 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 to motorized access, mechanized equipment, or aircraft 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, mechanized equipment use, and aircraft 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 wildfire for resource benefit are complete, with emergency consultation occurring as appropriate.

Energy and Mineral Development

Mineral development refers to surface and underground hardrock mining and coal production, which are regulated by permits on the Forest. Oil and gas production are conducted through a leasing process. Lands on the Forest are generally available for both locatable and leasable minerals exploration and development, with the exception of designated wilderness areas, and areas that are either administratively or congressionally withdrawn from those uses. Administratively withdrawn areas include but may not be limited to campgrounds, administrative

sites, or other identified developed sites. The Elkhorns Wildlife Management Unit within the Elkhorns GA is also administratively withdrawn from oil and gas leasing but could be available for other types of leasable mineral exploration and development. By act of congress, the entire Rocky Mountain Range GA is withdrawn from future locatable or leasable minerals exploration or development. The 2021 Forest Plan would not alter the acreage available for minerals and energy exploration or development described in the environmental baseline but would provide direction for managing any minerals and energy exploration and development that might occur.

PCA-NCDE-STD-12 requires no surface occupancy for any new leases for new leasable minerals within the recovery zone. PCAZ1-NCDE-STD-06, 07, 08, 09, 10, and 11 retain measures in existing permits and operating plans and add measures in new or reauthorized permits and operating plans to reduce or mitigate potential impacts to bears in the recovery zone and NCDE zone 1. Other guidelines and standards related to the management of energy and mineral development and grizzly bears are described in the biological assessment (U.S. Forest Service 2025).

The 2021 Forest Plan recognizes energy and minerals exploration and development as appropriate uses of Forest lands. Activities associated with these uses have the potential to impact individual grizzly bears. These activities may temporarily disturb grizzly bears in the area from noise and human presence. Many of the impacts are associated with motorized access, including aircraft, and are discussed above in the '*General Effects of Motorized Access 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). Over time, localized grizzly bear habitat may improve as a result of reclamation if human access is prevented, ecological functions are restored, and foraging or cover habitat improves.

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 aircraft 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 future mineral, gas, or oil developments would undergo a site-specific review and analysis of effects and site-specific consultation if applicable.

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). 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. 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 is approaching or within the dispersal range of male bears.

Connectivity between grizzly bear ecosystems can reduce genetic fragmentation and enhance genetic diversity (U.S. Fish and Wildlife Service 1993, Miller and Waits 2003), which improves resiliency of these populations. Human settlements, highways, and human-caused mortality contribute to grizzly bear population fragmentation (Servheen et al. 2001), including reduced rates of movement and genetic interchange. Although male grizzly bear movements across landscapes contributes to gene flow, female grizzly bear movement within and between ecosystems influences population trends (Proctor et al. 2012). Because female grizzly dispersal is generally shorter in distance compared to males, it is important to maintain habitat components in adjacent areas to support female life history requirements to promote dispersal (Proctor et al. 2004, Proctor et al. 2018). Since grizzly bears require large blocks of land with limited human influence to accommodate natural history needs (home range sizes, food diversity, cover, dens, etc.), maintaining or improving connectivity by reducing human influence and improving secure habitat (i.e., attractant storage and motorized access reductions) is important for demographic connectivity (Proctor et al. 2018, Whittington et al. 2022).

Connectivity between the GYE and the NCDE is a long-term goal in the state of Montana, which includes potential translocations to improve or enhance genetic diversity (Montana Fish Wildlife and Parks 2013, 2024). 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). Connectivity between the BE and the other grizzly bear Recovery Zones has recently been researched and includes pathway predictions for both natural recolonization and reintroduction to improve or enhance genetic diversity (Sells and Costello 2024). The NCDE appears to be more than capable of serving as a source population for other grizzly bear population, based on its large, increasing population size and its expanding distribution (NCDE Subcommittee 2020). Recent connectivity modeling predicted pathways of greatest use were associated with forested mountain ranges with two primary pathways connecting the NCDE and GYE: one west of Helena and Bozeman along the Garnet, Nevada, Boulder, Tobacco Root, Madison, and the Gravelly Mountains, and one east of both towns along the Big Belt, Bridger, and Gallatin Mountains. The GYE and Bitterroot Ecosystem (BE) were connected by the Sapphire, Anaconda, Highland, Tobacco Root, Gravelly, and Gallatin Mountains and one along the Beaverhead, Tendoy, and Centennial mountains, with grizzly bear verified sightings within some predicted pathways (Sells et al. 2023).

The Forest Plan has numerous goals, objectives, and standards that work towards protecting wildlife habitat and resources for grizzly bears, including connectivity. These goals are beneficial for grizzly dispersal and gene transmission. Further, many of the standards, guidelines, and objectives in the Forest Plan support reducing conflicts and improving or maintaining secure habitat that would also be beneficial for grizzly bears.

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 2021 Forest Plan. Continued implementation of the 2021 Forest Plan is likely to continue to maintain or improve habitat connectivity and demographic connectivity on the Forest between the NCDE and other ecosystems.

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 2021 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 2021 Forest Plan, we describe the potential effects of the 2021 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 2021 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 this biological opinion will be subject to subsequent site-specific section 7 consultation as appropriate.

In reviewing the effects of the 2021 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 and, to a lesser extent, livestock grazing. Effects related to motorized access and livestock grazing will vary depending on site-specific information. Not all actions related to motorized access and livestock grazing that may be proposed under the 2021 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, vegetation and fire management, or energy and mineral development, except for the effects that may be associated with motorized access, including potential aircraft 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 zone. The majority of the Forest is located outside of 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 2021 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. Current open route densities (and associated levels of secure core and secure habitat) within the NCDE recovery zone and NCDE zone 1 would be maintained under the 2021 Forest Plan. With a few exceptions, Forest lands within the NCDE recovery zone would be managed for no net increase above the 2011 baseline motorized access conditions. Secure habitat within the remainder of the Forest could change under the 2021 Forest Plan, potentially decreasing the amount of security habitat. However, as described above, the

likelihood of such is low. If such changes were to occur within the action area, the effects related to displacement of grizzly bears may also increase. No specific permanent increases are proposed under the 2021 Forest Plan and would be proposed on a site-specific basis with a site-specific analysis occurring.

Temporary route construction and use and temporary use of restricted routes may also occur on a project-by-project basis. 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.

Within the recovery zone, PCA-NCDE-STD-04 allows projects to temporarily increase OMRD by 5 percent, temporarily increase TMRD by 3 percent, and temporarily decrease secure core by 2 percent. PCA-NCDE-STD-02 requires that administrative use on roads with public restrictions does not exceed either six trips (three round trips) per week or one 30-day unlimited use period during the non-denning season. Temporary project implementation within the recovery zone is not expected to exceed 5 years (PCA-NCDE-GDL-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. As previously mentioned, while the 2012 planning rule allows the Forest to deviate from guidelines so long as they meet the purpose of the guidelines, it is not known at this time what other scenarios may be used to meet the purpose of these guidelines. Thus, these guidelines, as written, will be used as part of our effects analysis. If the purpose of the guidelines are met in a different way, site-specific consultation may be necessary depending on the site-specific information and effects.

Depending on the location, timing, and duration, the allowance of temporary changes in motorized access conditions within the 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 existing access condition of the project subunit and the potential temporary effects to the access metrics. While temporary effects to secure core would be allowed, the Forest has about 845,000 acres of secure core, of which about 821,000 acres are in wilderness or roadless areas (97 percent), meaning that only approximately 3 percent of the Forest's secure core occurs in areas that even allow road access.

For the purposes of this consultation, the Forest estimated that the construction and use of temporary project routes or temporary use of restricted routes outside of the recovery zone would temporarily decrease the effectiveness of secure habitat by an average of 2.5 percent and no more than 7 percent at any given time in any individual GBAU over the life of the 2021 Forest Plan. The temporary changes in the effectiveness of secure habitat would not likely occur in more than six GBAUs in total during that time and likely in no more than two adjacent GBAUs concurrently.

We do not expect all 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. 2024a, Costello et al. 2024). 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, successfully reproduce, and/or successfully raise dependent offspring. The level of effects would depend on such things as grizzly bear use in the action area, location of the route (i.e. does it affect secure habitat), length of the route, 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 motorized routes.

Depending on the site-specific project information (size, location, duration, etc.), effects associated with 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. 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 life of the 2021 Forest Plan.

Currently, the number of grizzly bears using the action area varies from higher numbers within the recovery zone and NCDE zone 1 to lower numbers in the remaining portions of the action area. For some areas of the Forest, grizzly bear 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 NCDE zone 2 and especially NCDE zone 3 of the action area 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 ongoing effects of the existing motorized access conditions, temporary routes, and temporary use of restricted routes 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 routes or temporary use of restricted routes that affect secure habitat. 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.

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 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. 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 2021 Forest Plan will experience significant effects related to motorized access. 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 motorized routes in some GBAUs without significant effects to breeding and/or feeding due to less competition from other grizzly bears.

The Service anticipates that winter motorized use (snowmobile or over-the-snow) that may occur under the 2021 Forest Plan may incidentally result in some very low level of adverse effects to female grizzly bears with offspring during den emergence. Where grizzly bears and snowmobiling do generally overlap, some spatial separation exists, however the potential of over-snow vehicle use adversely impacting an individual female grizzly bear with offspring cannot be eliminated.

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. 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. 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 over-snow motorized use to be significant.

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). Disturbance from winter motorized travel is likely most consequential shortly before or after den emergence, particularly to females with cubs. 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. 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. Thus, potential disturbance during this time may reach levels that may be significant to adult female grizzly bears 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 winter motorized use to be significant to male grizzly bears or female grizzly bears without cubs.

Winter motorized 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 snowmobiles in the broader area where grizzly bears may occur. Snowmobile use within the recovery zone portion of the action area is prohibited after March 31 with the exception of the

Copper Bowls play area where snowmobile use is authorized until May 31. Within the Copper Boles extended use area, approximately 691 acres overlap with modeled denning habitat. Within the portion of the action area outside of the recovery zone, the timeframe for winter motorized use varies. Portions of Dalton Mountain and Humbug GBAUs, in areas south of Highway 200, areas are open to snowmobiling through April 15; roughly 7,600 acres overlap modeled denning habitat. For the GBAUs across the remaining portions of the Forest, the dates during which over-snow motorized travel is authorized vary from yearlong to ending on May 15; for those areas where winter motorized use that extends beyond March 31 approximately 112,535 acres overlap with modeled denning habitat. Many of these same acres are relatively dry and snow can be intermittently present. Thus, not all areas legally open to over-snow motorized travel are actually available during the entire time they are open.

Thus, in total, approximately 120,826 acres of modeled denning habitat overlap late season snowmobiling beyond March 31. The late-season snowmobile closure dates are May 31 for the Copper Bowls extended use area within the recovery zone and April 15 to May 15 for the portion of the action area outside of the recovery zone.

Conflicts arising from livestock grazing are recognized as a source of human-caused mortality of grizzly bears. Grizzly bears habituated to livestock as a food source are more likely to be removed from the population due to management control and/or defense of life or property actions. The 2021 Forest Plan provides management direction that incorporates requirements into new or reauthorized grazing permits that reduce the risk of grizzly bear-human conflict and require reporting of livestock carcasses within 24 hours of discovery within the recovery zone and NCDE zone 1, prohibit increases in the number of sheep allotments or permitted animal unit months above the baseline within the recovery zone and NCDE zone 1, reduce the number of sheep allotments when opportunities arise in the recovery zone, limit potential conflict associated with weed control via small livestock within the recovery zone and NCDE zone 1, and prohibit increases in the number of active cattle grazing allotments in the recovery zone. These standards and guideline do not apply to the portions of the action area within NCDE zones 2 and 3.

Livestock management in the action area, especially if sheep allotments are added in NCDE zones 2 and/or 3, has the potential to result in adverse impacts to grizzly bears if livestock/grizzly bear conflicts occur. Grizzly bears may become food conditioned/habituated and seek out livestock as prey, which may result in the removal of grizzly bears. No documented grizzly bear mortalities associated with livestock have occurred within the action area. Based on the information for livestock grazing in the action area (the small number of sheep allotments, the standards within the recovery zone and NCDE zone 1, and the history of no grizzly bear mortalities associated with livestock), the likelihood of adverse impacts to grizzly bears related to livestock grazing in the action area during the life of the 2021 Forest Plan is very low, but cannot be ruled out entirely. Due to the long duration of the 2021 Forest Plan, the number of grizzly bears using the action area is expected to increase and livestock grazing will remain a potential risk. Therefore, it is reasonable to expect that some risk, albeit low, of adverse impacts to grizzly bears related to livestock grazing exists over the life of the 2021 Forest Plan. Any new permits or changes to existing permits would proceed through a site-specific section 7 consultation, as appropriate.

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 population 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 are rare to non-existent.

Much of the action area is located outside of the NCDE recovery zone. The Recovery Plan stated that grizzly bears living within the recovery zone 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 zone, 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 grizzly bears may be adversely affected at times over the life of the 2021 Forest Plan, we anticipate that grizzly bear 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 here is 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. 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.

Montana Fish, Wildlife & Parks released the final Statewide Grizzly Bear Management Plan on Sept. 30, 2024 (Montana Fish, Wildlife and Parks 2024). The statewide Grizzly Bear Management Plan outlines how Montana FWP plans to manage grizzly bears where they exist today, to include areas between the four recovery zones in Montana. The plan prioritizes connectivity between ecosystems and working with people and communities to avoid conflicts

with bears. The statewide management plan replaces two existing management plans – those for western Montana and for southwest Montana – with one statewide plan. The plan recognizes that connectivity between populations of bears is an important part of their continued conservation. That connectivity can be aided with outreach and education to help communities and homeowners understand the value of securing attractants and avoiding conflicts. Montana FWP is also very active in providing public information and education about conserving grizzly bears and their habitat. This includes bear management specialists 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 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 occur within and adjacent to the action area. The human population within 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 and can result in habitat loss, habitat fragmentation, and increases in human-grizzly bear conflicts. Recreation, livestock grazing, ranching and farming, mineral development, and 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 are typically 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. Efforts are made to prevent grizzly bear conflict on private lands, including installing electric fences, practicing proper attractant storage, moving livestock carcass piles, and reporting sightings of grizzly bears or bear sign, among others. Although this may minimize some potential cumulative effects to grizzly bears on non-federal lands, management removals of grizzly bears are still possible.

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 on 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 and National Marine Fisheries 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 direction is an unauthorized, non-permitted activity. Any such unauthorized use is not considered a Forest (federal) action. While it may be reasonable to assume that some future illegal or unauthorized 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 or unauthorized 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 unauthorized actions being non-federal). When illegal or unauthorized activity is discovered, it is addressed through a number of means by the Forest as soon as possible.

No specific amount or location of unauthorized motorized access is reasonably certain to occur (as it is not supposed to occur in the first place), however if and when 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 uncertain until such time that unauthorized use is found to be occurring. The probability of long-term

unauthorized motorized access and the probability of unauthorized 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. If unauthorized motorized access were to occur in the future it is expected that such use would likely occur, but not always, in portions of the action area that are already roaded. This assumption is based on the unauthorized motorized use previously identified in other areas (outside of the action area) throughout the distribution of grizzly bears. Further, if future unauthorized motorized access occurs, it 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 unauthorized use is observed or when user-created roads become apparent, the situation is corrected as soon as practicable. If a situation of chronic unauthorized motorized access were to occur in the future, that would be analyzed site-specifically. Reference the in-depth analysis of unauthorized motorized access in the Baseline section above, which is also applicable here and incorporated by reference. That section also explains why the metrics used to calculate the effects to grizzly bears from authorized motorized access on the Forest would not be affected from short-term, temporary unauthorized motorized access.

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 populations in the NCDE and GYE are increasing and expanding distribution. The estimated population size and distribution in both the GYE (1,030 individuals in the DMA) and NCDE (1,163 individuals) have more than doubled since listing (van Manen et al. 2024, Costello et al. 2024, U.S. Fish and Wildlife Service 2022, 2024). 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 2.7 percent and the SE increasing with an annual growth rate of 2.6 percent (Kasworm et al. 2024a, Kasworm et al. 2024b). 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 2021 Forest Plan would continue to provide habitat for grizzly bears. Cumulative effects are not likely to result in significant effects to the NCDE grizzly bear population within the action area or the grizzly bear listed entity 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 considering 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, the Service's biological opinion is that the effects of the 2021 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 2025), additional information received during this consultation process, information in our files, and informal discussions between the Service and the Forest.

Actions conducted under the 2021 Forest Plan may occasionally result in adverse effects to individual grizzly bears and/or dependent offspring over the life of the plan, particularly as a consequence of the potential disturbance and/or displacement related to motorized access. The likelihood of adverse impacts to individual grizzly bears related to livestock grazing in the action area during the life of the 2021 Forest Plan is low but cannot be ruled out. The Forest is located within the NCDE. Based on the best available scientific information reviewed in this consultation, such adverse effects will not negatively impact the recovery of the NCDE grizzly bear population, nor the listed entity of grizzly bears. Further, we expect the 2021 Forest Plan direction will result in conditions that support continued grizzly bear use of the action area. Thus, it is our opinion that the 2021 Forest Plan would not appreciably reduce the likelihood of both the survival and recovery of the listed entity of grizzly bears. 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 2021 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 2021 Forest Plan applies to areas both within and outside of the NCDE recovery zone, with the majority of the Forest being outside of the recovery zone.

- We do not anticipate adverse effects as a result of food and attractant storage and site development, vegetation management and fire management, or energy and mineral

development, except for the potential effects that may be associated with motorized access management, mechanical equipment use, or aircraft use.

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

- Any effects associated with mechanical equipment use or aircraft use will be analyzed during future site-specific consultations, as necessary.

- Existing motorized access conditions within the NCDE recovery zone are not resulting in ongoing adverse effects to grizzly bears.

- Depending on the location, timing, and duration, the allowance of temporary changes in motorized access conditions within the recovery zone may result in some level of effects, including the potential for adverse effects to grizzly bears. Such effects would depend on the existing access condition of the project subunit and the potential temporary effects to the motorized access metrics. While temporary effects to secure core would be allowed, 97 percent of secure core occur within in wilderness or roadless areas meaning that only approximately 3 percent of the Forest's secure core in the recovery zone could be affected by temporary effects associated with motorized access.

- In general, outside of the NCDE recovery zone, the ongoing effects of the existing (baseline) motorized access conditions, effects from potential 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. We do not anticipate adverse effects to male or transient grizzly bears that may use the action area.

- 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 low amounts of secure habitat and high amounts of 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 2021 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 new 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,

amount of secure habitat, 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 2021 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 life of the 2021 Forest Plan.

- Motorized access conditions and management are not expected to preclude grizzly bears from using the action area, nor are they expected to 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.

- The late-season snowmobile closure dates are May 31 for the Copper Bowls extended use area within the recovery zone and range from April 15 to May 15 for the portion of the action area outside of the recovery zone. As such, some level of late season winter motorized use may occur during the time grizzly bears are emerging from dens. 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 during the grizzly bear den emergence period cannot be eliminated.

- In total, this late season winter motorized travel overlaps with approximately 120,826 acres of modeled denning habitat. This includes about 691 acres within the recovery zone and 120,135 acres outside of the recovery zone, much of which (112,535 acres) are located within NCDE zones 2 and 3 where grizzly bears are less likely to be denning.

- While these acres are open to motorized use during the den emergence period, from a qualitative review, not all of these acres of over-snow vehicle use are available for such due to either the ruggedness of the terrain or logistical limitations (e.g., fuel). Many of these acres are relatively dry and snow can be intermittently present. Thus, not all areas legally open to over-snow motorized travel are actually available during the entire time they are open. In addition, some areas may not be available to late season winter motorized use due to a lack of snow in areas that may be drier and lower elevation. Finally, most of these acres are not currently supporting denning grizzly bears but due to the long-term nature of the Forest Plan such use could occur in the future.

- Livestock management under the 2021 Forest Plan has the potential to result in some level of adverse impacts to individual grizzly resulting from grizzly bear-human conflicts and grizzly bear mortalities or management removals. Some individual grizzly bears may become food conditioned or habituated to seek out livestock as prey, which may result in their management removal from the population.

- No documented grizzly bear mortalities, including management removals, associated with livestock have occurred on the Forest.

- The Forest is not proposing any changes to the total number of allotments and no significant changes have occurred to the allotments. The location, size, or management of grazing allotments would not be affected by the proposed action (continued livestock grazing under the Forest Plan). Any changes would be addressed through site or area specific range analyses.

- Any changes to livestock grazing on the Forest that may occur at the site-specific level would proceed through a site-specific section 7 consultation, as appropriate.

- The 2021 Forest Plan provides management direction that would incorporate requirements into new or reauthorized grazing permits that reduce the risk of grizzly bear-human conflict and require reporting of livestock carcasses within 24 hours of discovery within the recovery zone and NCDE zone 1, prohibit increases in the number of sheep allotments or permitted animal unit months above the baseline within the recovery zone and NCDE zone 1, reduce the number of sheep allotments when opportunities arise in the recovery zone, limit potential conflict associated with weed control via small livestock within the recovery zone and NCDE zone 1, and prohibit increases in the number of active cattle grazing allotments in the recovery zone.

- Based on the information for livestock grazing in the action area (the small number of sheep allotments, the standards within the recovery zone and NCDE zone 1, and the history of no grizzly bear mortalities associated with livestock), the likelihood of adverse impacts to grizzly bears related to livestock grazing in the action area during the life of the 2021 Forest Plan is very low, but cannot be ruled out entirely. Due to the long duration of the 2021 Forest Plan, the number of grizzly bears using the action area is expected to increase and livestock grazing will remain a potential risk, albeit low.

- While some adverse effects to individual grizzly bears may occur related to actions carried out under the 2021 Forest Plan, they are not expected to have a negative effect on the survival and recovery of the NCDE grizzly bear population nor 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 life of the 2021 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 <u>total</u> 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 2018 through 2023, the estimated annual survival rate for independent females within the demographic monitoring area was 93 percent (Costello et al. 2024).

- 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 et al. 2023).

- From 2018 through 2023, the average annual number of total reported and unreported (TRU) mortalities for independent females within the DMA was 16, below the maximum threshold of 26 and the average annual number of TRU for independent males was 26, falling below the maximum threshold of 31 (Costello et al. 2024).

- 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 (Costello et al. 2024).

- 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. Based on revised biennial estimates beginning in 2004, occupied range of the NCDE grizzly bear population increased an average of 3 percent annually from 2004 through 2022 (Costello et al. 2023).

- While the existing motorized access conditions may be adversely affecting some low level of individual female grizzly bears, these conditions were present on the landscape while the grizzly bear population has continued to increase in size and distribution (Costello et al. 2016, Kendall et al. 2009, Mace et al. 2012).

- 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.

- The NCDE Food Storage Order is in effect throughout the NCDE recovery zone and several areas outside of the recovery zone on National Forest lands (including the entire Forest) and Glacier National Park. These agencies have been successful at managing attractants on federal lands under the current 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.

Recovery zones were established to identify areas necessary for the recovery of grizzly bears 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 within recovery zones are managed with grizzly bear recovery as a primary factor. As anticipated in the grizzly bear 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 (GYE, 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.

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 1,163 grizzly bears for 2023 (Costello et al. 2023), an estimated positive population trend of 2.3 percent annually (Costello et al. 2016), and the current distribution of grizzly bears (U.S. Fish and Wildlife Service 2022, Costello et al. 2024). 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.

While the 2021 Forest Plan direction may result in some low level of adverse effects to some of the individual grizzly bears using the action area, considering the large size of the NCDE recovery zone, favorable land management within the recovery zone, and the robust status of the NCDE grizzly bear population, adverse effects on grizzly bears as a result of implementing the 2021 Forest Plan would not have negative effects on the status of the NCDE grizzly bear population. This population is robust, the recovery zone is large, and management within the recovery zone 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. Further, the majority of the Forest (action area) is located outside of the grizzly bear recovery zones, in areas between the GYE and NCDE. 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 2021a). In sum, we conclude that the 2021 Forest Plan is not likely to reduce the numbers, distribution, or reproduction of grizzly bears in the action area nor the NCDE. Consequently, the 2021 Forest Plan is not likely to reduce the numbers, distribution, or reproduction of grizzly bears 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 2021 Forest Plan to have any negative effects to individual grizzly bears or to grizzly bear populations outside of the NCDE. In other words, we do not expect the 2021 Forest Plan to negatively affect grizzly bears within or connectivity with the surrounding grizzly bear ecosystems (Yellowstone, Cabinet-Yaak, Bitterroot) nor the ecosystems further away (North Cascades, Selkirks).

Because the 2021 Forest Plan would not reduce the reproduction, numbers, or distribution of grizzly bears throughout the NCDE, the 2021 Forest Plan would not have negative impacts at the

level of the entire listed entity (the lower 48 states). Thus, we conclude that the 2021 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 2021 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 2021 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.

The life of the Forest Plan serves as the temporal bounds for this incidental take statement. Based on the duration since the 2021 Forest Plan was signed, this incidental take statement expires at the end of 2036. For some activities implemented under the 2021 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 2021 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 2021 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.

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 a level of adverse effects to some female grizzly bears and/or their dependent offspring at some point during the life of the 2021 Forest Plan, primarily those that attempt to establish and maintain home ranges within the action area. Future 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 would result from 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. 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. Therefore, 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 informed by 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, a change 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 motorized routes 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 routes are buffered, regardless of whether they are legally open or closed to public travel, when delineating secure habitat outside of the recovery zone. As such, the estimates of secure habitat are in most cases underestimates of actual secure habitat that exists on the ground because an unknown number of routes that are physically impassable to motor vehicle use have not been updated within the access database and thus were excluded from secure habitat polygons. 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 effects of motorized access 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).

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 impacts to grizzly bears and will capture any unknown or undisclosed impacts 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 impacts 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 impacts to grizzly bears, in order to not miss any potential impacts 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 impacts to grizzly bears that may have occurred from actions on non-Forest lands. In other words, any potential unknown impacts 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 impacts of such are already considered into the metrics of secure habitat that are measured for Forest lands. Thus, we would not miss any impacts to secure habitat on Forest lands over time, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1998). Using this conservative approach does not result in significant impacts to the grizzly bear population.

The Forest is expected to update the secure habitat metrics as they update their motorized 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 not modeled 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 modeling rather than representing actual changes on the ground or resulting 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.

The action area occurs within the NCDE in areas where grizzly bears may be present. Within the NCDE recovery zone, 16 subunits occur on the Forest manages 16 (see Table 1 above). The remainder of the Forest in the NCDE is outside of the recovery zone. The area outside of the recovery zone has been delineated into 22 GBAUs.

No subunits within the recovery zone have existing conditions that may be resulting in ongoing significant effects to grizzly bears associated with motorized access under the 2021 Forest Plan. Outside of the recovery zone, the estimated amount of secure habitat on Forest land ranges from a low of 15 percent in the Sheep Creek GBAU to a high of 63 percent in the Snowies GBAU. Of all 22 GBAUs, 1 has less than 20 percent secure habitat on Forest land, 3 have between 20 and 29 percent secure habitat on Forest land, 8 have between 30 and 39 percent secure habitat on Forest land, 6 have between 40 and 49 percent secure habitat on Forest land, 2 have between 50 and 59 percent secure habitat on Forest land, and 2 have 60 percent or greater secure habitat on Forest land. It is likely that most but not all of the GBAUs have existing motorized access conditions that may be resulting in 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 some level of adverse effects, will continue during the life of the 2021 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.

Based on the information provided by the Forest, the potential effects of permanent route construction on secure habitat depend entirely on the location of the new route and the existing secure habitat polygons. For example, a permanent road could be constructed completely outside of secure habitat, as well as the 500-meter buffer, and would have no effect on secure habitat. A different example could include permanent route construction through the middle of a secure habitat polygon, potentially resulting two polygons of habitat that no longer provide secure habitat (depending on size, etc.). Other examples of permanent route construction would result in effects that fall somewhere in between these two examples. Thus, we cannot reasonably estimate the impacts that future permanent motorized route construction would have on secure habitat and site-specific analyses would need to occur for any permanent motorized route construction that may be proposed in the future. Therefore, permanent motorized route construction will not be addressed in this incidental take statement.

Given the lack of forest plan direction requiring specific levels of secure habitat in the areas outside of the recovery zones, it's possible that projects may temporarily reduce the effectiveness of the existing secure habitat. Given the variation in individual projects, the potential effects of temporary motorized route construction and use on secure habitat depend entirely on the location of the new route and the existing secure habitat polygons. For example, 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 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 routes are built directly within secure habitat; thus, affecting or potentially splitting a secure habitat polygon. Depending on the circumstances of the new routes as described above, they may or may not affect secure habitat.

The construction and use of 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 2021 Forest Plan, temporary route construction and use and/or temporary use of restricted routes may occur on a project-by-project basis. 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 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 GBAUs and continued presence of these motorized routes under the 2021 Forest Plan, along with temporary route construction and use and temporary use of restricted routes, both within and outside of the recovery zone, 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 2021 Forest Plan. We anticipate that in a limited number of circumstances, site specific conditions may 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, temporary motorized route construction and use, and temporary use of restricted routes would affect only a very few adult females over the life of the 2021 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 route 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 2021 Forest Plan. We expect harm would be caused by significant under-use of key habitat in areas affected by high motorized route densities and low amounts of secure habitat 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.

At this time, grizzly bears have not been verified within some GBAUs in the action area (the Forest). In addition, in some areas where transient males have been verified, no female grizzly bears have been verified. Until such time that female grizzly bears begin to use these GBAUs, the existing motorized access conditions and/or temporary routes or temporary use of restricted routes will not result incidental take of grizzly bears. We conservatively include the potential for incidental take of grizzly bears in these areas due to the long timeframe that the 2021 Forest Plan will be effective, during which some females may begin to use these GBAUs in the future and experience incidental take from the ongoing motorized access conditions and low amounts of secure habitat and/or temporary routes or temporary use of restricted routes that affect secure habitat. In sum, while we do not expect incidental take at this time for these scenarios, incidental take of individual female grizzly bears and/or their dependent offspring may occur if and when female grizzly bears and/or their dependent offspring occur in these areas at some point in the future.

The effects of high motorized 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 motorized access conditions. 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 conditions, not all adult female bears and/or their dependent offspring that are exposed to disturbances from high route densities and low amounts of secure habitat 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, 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 (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1998). Take also may be expressed as a change in habitat characteristics affecting the species (*Ibid*.). 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 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 2021 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 2021 Forest Plan in the form of harm related to the displacement effects of existing motorized access, temporary route construction and use, and temporary use of restricted routes. 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 motorized access conditions including 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 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 GBAUs. Our **first surrogate measures of incidental take of grizzly bears** will be represented by the habitat conditions in the GBAUs resulting from the existing motorized access conditions on the Forest that may continue to result in some level of ongoing incidental take over the life of the Forest Plan.

As 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. Because secure habitat provides a more accurate indication of the spatial mix of motorized routes than a simple linear route density, 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 within the GBAUs on the Forest will represent the incidental take associated with existing motorized access conditions. Table 5 below displays 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 5. Estimated secure habitat on Forest Land within the GBAUs (U.S. Forest Service 2025).

GBAU	Estimated Percent of Forest Land Providing Secure Habitat
Dalton Mountain	39%
Humbug	32%
Boulder River BDNF	34%
Casey Peak	55%
Crow Creek	47%
Lazyman	25%
North Divide	26%
Spotted Dog	36%
Middle Big Belts	40%
North Big Belts	49%
South Big Belts	36%
Dry Wolf	38%
Elephant	32%
Pilgram	49%
Middle Fork Judith	61%
Sheep Creek	15%
Tenderfoot-Smith	50%
Upper Belt Creek	34%
Highwoods	41%
Castles	24%
Crazies HLC	42%
Snowies	63%

In summary, should the metrics displayed in Table 5 be exceeded, 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. Under CFR 402.16 (1), in this scenario, reinitiation of consultation would be required, with the exceptions described in the next paragraph.

The existing motorized access conditions were determined using the best available information. The Service recognizes that improved information may be documented and modeling 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 modeling 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.

Surrogate 2

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 significantly 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 2021 Forest Plan. Our second surrogate measure of incidental take of grizzly bears will be represented by the temporary effects 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 recovery zone, PCA-NCDE-STD-04 allows projects to temporarily increase OMRD by 5 percent, temporarily increase TMRD by 3 percent, and temporarily decrease secure core by 2 percent using a 10-year running average. As previously described, the effects guidance for OMRD, TMRD, and secure core describes 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. Incidental take related to temporary projects will only occur when temporary changes to access conditions cause OMRD to exceed 1 mile per square mile in more than 19 percent of the subunit, TMRD to exceed 2 miles per square mile in more than 19 percent of the subunit, or secure core to decrease below 68 percent of the subunit. While changes in road density and/or secure core will be temporary, adverse effects and incidental take may occur while these changes are implemented on the ground. PCA-NCDE-STD-02 requires that administrative use on roads with public restrictions does not exceed either six trips (three round trips) per week or one 30-day unlimited use period during the non-denning season. Temporary project implementation within the recovery zone should not exceed 5 years (PCA-NCDE-GDL-01). Further, guideline PCA-NCDE-GDL-02 ensures that pre-project conditions (i.e., OMRD, TMRD, secure core) would generally be restored within 1 year of project completion. While the 2012 planning rule allows the Forest to deviate from guidelines so long as they meet the purpose of the guidelines, it is not known at this time what other scenarios may be used to meet the purpose of these guidelines. Thus, these guidelines, as written, will be used as part of our surrogate measure of take. If the purpose of the guidelines are met in a different way, site-specific consultation may be necessary depending on the site-specific information and effects.

Outside of the recovery zone, 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 an average of 2.5 percent and no more than 7 percent at any given time in any individual GBAU. The temporary changes in the effectiveness of secure habitat, which may occur during implementation of vegetation management projects, would not likely occur in more than six GBAUs in total during that time and likely in no more than two adjacent GBAUs concurrently. 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 temporary route construction and/or temporary use of restricted routes that affect OMRD, TMRD, and/or secure core in the recovery zone or secure habitat outside the recovery zone represents our **second surrogate measure of incidental take of grizzly bears** that we anticipate in regards to motorized access.

- If projects within the 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 restricted routes exceeding either six trips (three round trips) per week or one 30-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 our second surrogate measure of take within the recovery zone in would be exceeded and therefore the level of take exempted would be exceeded. Under CFR 402.16 (1), in this scenario, reinitiation of consultation would be required.

- Further, if more than 7 percent of the secure habitat is affected in any individual GBAU at any given time as a result of temporary road construction and use and/or temporary use of restricted roads then the level of incidental take we anticipate in our second surrogate measure of take would be exceeded and therefore the level of take exempted would be exceeded. Under CFR 402.16 (1), in this scenario, reinitiation of consultation would be required.

Winter Motorized Use

In addition to non-winter motorized access, the Service anticipates that winter motorized use (e.g. snowmobile or over-the-snow) that may occur under the 2021 Forest Plan may incidentally result in some very low level of take of female grizzly bears with offspring during den emergence. 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 2022). 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.

The best information available indicates that effects from winter motorized use to grizzly bears emerging from dens was a higher concern than impacts to denning bears (Graves and Ream 2001). The Service concludes that disturbance from winter motorized use 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 winter motorized use to grizzly bears in dens may cause premature den emergence. 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 winter motorized use would be significant to male grizzly bears or female grizzly bears without cubs.

Female grizzly bears with dependent offspring have high energetic needs in the spring, and cubs have limited ability to travel for several weeks after emergence from the den. Disturbance from winter motorized travel is likely most consequential shortly before or after den emergence, particularly to females with cubs. 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, safety, or abandonment of her dependent offspring. If dependent offspring attempt to follow their mother prior to their gaining some mobility, they may experience some level of decreased fitness or death. Thus, potential disturbance during this time may reach levels that may be significant to adult female grizzly bears and/or their dependent offspring.

As late-season winter motorized use can occur on some portions of the Forest, the Forest does have some areas where winter motorized travel may occur during the grizzly bear den emergence period. Snowmobile use within the recovery zone portion of the action area is prohibited after March 31 with the exception of the Copper Bowls play area where snowmobile use is allowed until May 31. Within the Copper Boles extended use area, approximately 691 acres overlap with modeled denning habitat. Within the portion of the action area outside of the recovery zone, the timeframe for winter motorized use varies. Portions of Dalton Mountain and Humbug GBAUs, in areas south of Highway 200, areas are open to snowmobiling through April 15; roughly 7,600 acres overlap modeled denning habitat. For the GBAUs across the remaining portions of the Forest, the dates during which over-snow motorized travel is authorized vary from yearlong to ending on May 15; for those areas where authorized winter motorized use that extends beyond March 31 approximately 112,535 acres overlap with modeled denning habitat. We do not expect significant effects beyond May 15 as the likelihood of overlap of snowmobiling and emerging female grizzly bears with cubs at that time would be very low.

Thus, in total, approximately 120,826 acres of modeled denning habitat overlap authorized late season winter motorized use beyond March 31. The potential for significant effects would be related to the authorized late-season snowmobile closure dates of May 31 for the Copper Bowls extended use area within the recovery zone and April 15 to May 15 for the portion of the action area outside of the recovery zone. 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 late season over-snow vehicle use due to a lack of snow in areas that may be drier and lower elevation. Finally, most of these acres are not

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.

Winter motorized 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 such use in the broader area where grizzly bears may occur. Where grizzly bears and winter motorized use do generally overlap, some spatial separations still occurs. However, the potential of winter motorized 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 incidental take of female grizzly bears and/or their dependent offspring 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 winter motorized use;
- the location of one or more cubs abandoned by their mother near or in a den in an area of winter motorized 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 winter motorized use; or
- a female bear that emerges in poor fitness in early spring (when other bears are in good condition) in an area of winter motorized 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 winter motorized use and these effects would be difficult.

Discovery of an individual grizzly bear injury or mortality attributed to winter motorized 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 winter motorized use is not known. The number of females with cubs, pregnant females, den emergence dates, and snowmobile 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 winter motorized 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 and/or their dependent offspring would be very low and would occur only infrequently over the life of the 2021 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 3

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 modeled grizzly bear denning habitat open to winter motorized use beyond March 31 and the season ending dates for those areas open beyond March 31.

Despite the Forest covering a large area of grizzly bear habitat, grizzly bear denning has not been recorded in all portions of the Forest. 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 in some areas until such time a female grizzly bear dens in any given area, due to the long duration of the Forest Plan, we will address all areas of the Forest.

In total, approximately 120,826 acres of modeled denning habitat overlap authorized late season winter motorized use beyond March 31. The potential for significant effects would be related to the authorized late-season snowmobile closure dates of May 31 for the Copper Bowls extended use area within the recovery zone and April 1 to May 15 for the portion of the action area outside of the recovery zone. These acres of modeled denning habitat and potential winter motorized use along with the late season closure dates represent the **third surrogate measure of the incidental take of grizzly bears that we anticipate** as a result of the 2021 Forest Plan. If the amount of modeled denning habitat open to authorized winter motorized use after March 31 exceeds the acres provided, or if authorized snowmobiling continues beyond the closure dates provided in the third surrogate measure, then the level of incidental take we anticipate in our third surrogate measure of take would be exceeded and therefore the level of take exempted would be exceeded. Under CFR 402.16 (1), in this scenario, reinitiation of consultation would be required.

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. The permitted livestock grazing may indirectly result in the removal or death of grizzly bears because bears prey on livestock. Some individual grizzly bears may become food conditioned or habituated to seek out livestock as prey and tend to continue such behavior. These grizzly bears may be removed from the population in management actions.

The risk of adverse impacts to grizzly bears do exist associated with livestock grazing under the 2021 Forest Plan. Livestock grazing will pose more risk as grizzly bear numbers increase and expand on the Forest. Livestock depredation by grizzly bears may indirectly result in incidental take of grizzly bears by modifying natural feeding behavior to the point where management removal of the grizzly bear is needed.

The 2021 Forest Plan provides management direction that would incorporate requirements into new or reauthorized grazing permits that reduce the risk of grizzly bear-human conflict and require reporting of livestock carcasses within 24 hours of discovery within the recovery zone and NCDE zone 1, prohibit increases in the number of sheep allotments or permitted animal unit months above the baseline within the recovery zone and NCDE zone 1, reduce the number of sheep allotments when opportunities arise in the recovery zone, limit potential conflict associated with weed control via small livestock within the recovery zone and NCDE zone 1, and prohibit increases in the number of active cattle grazing allotments in the recovery zone. These standards and guideline do not apply to the portions of the action area within NCDE zones 2 and 3. Based on recent trends in grazing, we assume the number of sheep allotments will not increase substantively within the action area.

No documented grizzly bear mortalities associated with livestock have occurred within the action area. Based on the information for livestock grazing in the action area (the small number of sheep allotments, the standards within the recovery zone and NCDE zone 1, and the history of no grizzly bear mortalities associated with livestock), the likelihood of incidental take of grizzly bears associated with livestock grazing in the action area during the life of the 2021 Forest Plan is very low. However, due to the long duration of the 2021 Forest Plan, the number of grizzly bears are expected to continue to increase in the action area and grizzly bears subject to potential management removal or mortality as a result of grizzly bear-livestock and grizzly bear-human conflicts may occur. Therefore, it is possible that management actions against grizzly bears related to livestock grazing may be required and thus, the potential for incidental take cannot be completely ruled out if such conflicts occur.

The Service anticipates take in the form of harm to grizzly bears as a consequence of livestock grazing and the associated livestock management operation in habitats commonly used by grizzly bears. The habitat modification of adding a significant, anthropogenic food source that results in the death or injury of bears can itself be considered “take” in the form of harm. The likely depredation of some of the permitted livestock represents an impairment of natural feeding behavior from wild animals to livestock that may in some cases ultimately lead to management removal or death of grizzly bears.

According to Service policy, as stated in the Endangered Species Consultation Handbook (U.S. Fish and Wildlife Service and National Marine Fisheries Service [NMFS] 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.

Surrogate 4

The level of incidental take in the form of harm associated with livestock grazing is difficult to detect and quantify. Therefore, in such cases, the Service uses surrogate measures to gauge the level of take. In this case, we anticipate that the level of incidental take resulting from livestock grazing under the 2021 Forest Plan in the form of harm is proportional to the number of grizzly bears that are removed or killed on the Forest associated with livestock grazing. We base this on the fact that both the level of take through harm and associated grizzly bear mortalities will correlate to the level of bear use and permitted grazing use on the Forest. Specifically, the Service believes this level of take in the form of harm is proportional to the management actions for nuisance bear control in compliance with the Interagency Grizzly Bear Guidelines (IGBC 1986) or from defense of life or property, when the permitted grazing or associated activities are reasonably believed to have contributed to the injury or death of the grizzly bear (e.g., direct connection to grazing, such as the management of bear depredating livestock, or indirect connection to grazing, such as defense of life). The illegal killing or injury of grizzly bears (including trapping or shooting by private citizens) constitutes a separate action that is not exempted by the special regulations nor this biological opinion.

Based on this information, we anticipate that no more than one grizzly bear will be removed from the action area over any given 10-year period over the life of the 2021 Forest Plan for management purposes related to livestock grazing. This represents our **fourth surrogate measure for incidental take of grizzly bears** in the form of harm through habituation and/or modification of natural feeding behavior associated with livestock grazing. Tracking of incidental take associated with livestock grazing began when the 2021 Forest Plan became effective and should be tracked on a sliding scale (ex. 2021-2030, 2022-2031, 2023-2032 and so on).

In summary, should more than one grizzly bear be removed from the action area during any given 10-year period over the life of the 2021 Forest Plan related to livestock grazing, 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. Under CFR 402.16 (1), in this scenario, reinitiation of consultation would be required. Additionally, should the level of incidental take associated with livestock grazing reach, but not exceed, the anticipated incidental take level, the Forest should informally consult with the Service regarding the adequacy of existing mechanisms to minimize potential take.

Summary

In summary, over the life of the 2021 Forest Plan, through 2036, if any of the following scenarios occur then the level of incidental take we anticipate associated with the 2021 Forest

Plan 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) A permanent decrease in the amount of secure habitat in the GBAUs associated with the existing motorized access conditions from the amounts displayed in Table 5 in our first surrogate measure of take above that are not associated with modeling or calculation errors.

2) Temporary route construction and use and/or temporary restricted route use that results in conditions worse than the conditions described in our second surrogate measure of take above including:
    a. Projects within the recovery zone that 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 restricted routes exceeding either six trips (three round trips) per week or one 30-day unlimited use period during the non-denning season; exceed 5 years; and/or motorized access conditions (i.e., OMRD, TMRD, secure core) are not restored to pre-project conditions within 1 year of project completion.

    b. Projects outside of the recovery zone that temporarily result in more than 7 percent of the secure habitat affected in any individual GBAU at any given time.

3) Authorized late season winter motorized use after March 31 that overlaps more than 120,826 acres of modeled grizzly bear denning habitat or authorized winter motorized use occurs beyond the provided closure dates as described in our third surrogate measure of take above.

4) More than one grizzly bear removed from the action area over any given 10-year period over the life of the 2021 Forest Plan for management purposes related to livestock grazing, as described in our fourth surrogate measure of take above.

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 food and attractant storage orders expire, it is possible (although unlikely) that the Forest is without a food and attractant storage orders 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 and/or incidental take of 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 zone. As detailed in this opinion, and according to the 1993 recovery plan (U.S. Fish and Wildlife Service 1993), 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 grizzly bear population, incidental take of grizzly bears in the action area would not affect the recovery of the listed entity of grizzly bears. The 2021 Forest Plan implements several measures that would sufficiently minimize impacts to grizzly bears.

Reasonable and Prudent Measures

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 2021 Forest Plan reduces the potential for and minimizes the overall effect of incidental take of grizzly bears. By managing for grizzly bears within the NCDE recovery zone and NCDE zone 1 (following the NCDE conservation strategy), the amount of incidental take of grizzly bears will be limited. 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.

2. Minimize the potential for harm of grizzly bears from livestock grazing.

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. Concurrent, temporary increases in OMRD or TMRD, or concurrent temporary effects to secure core for projects shall not occur in more than three adjacent grizzly bear management subunits on the Forest within the recovery zone.

2. For those actions associated with site-specific projects that result in temporary changes in the effectiveness of secure habitat within GBAUs associated with site-specific temporary route construction and use, and/or temporary use of restricted routes shall be limited to the following: 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 shall not occur for more than 10 years.

3. 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).

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

To implement Reasonable and Prudent Measure #2:

1. To minimize potential attractants to grizzly bears and associated potential bear-human conflicts, the Forest will include a provision in all livestock grazing permits requiring the permittee to notify the Forest within 24 hours of discovery of a livestock carcass; notification will be followed by proper disposal or management of the carcass.

Reporting requirements

To demonstrate that the 2021 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 May 1 for the preceding two calendar years for the life of the 2021 Forest Plan. The report shall include:

1. In relation to the first surrogate measure of incidental take of grizzly bears and term and condition 3, provide an up-to-date record of the existing 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 determine if the changes are related to updates associated with no changes on the ground (based on new information, modeling or calculation errors, etc.) as described in the first surrogate measure. In addition, report the existing conditions along with any updates to the baseline for project-related GBAUs at the time of site-specific section 7 project consultations.

2. In relation to the second surrogate measure of incidental take of grizzly bears and term and condition 1, provide an up-to-date record of the amount of OMRD, TMRD, and secure core within the recovery zone and/or the percent of secure habitat temporarily affected within the GBAUs outside the recovery zone affected by temporary projects. Also include 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 third surrogate measure of incidental take of grizzly bears, provide an up-to-date record of any changes in the amount of modeled grizzly bear denning habitat that overlaps authorized late season winter motorized use beyond March 31 and any authorized changes in the snowmobile closure dates.

4. In relation to the fourth surrogate measure of incidental take of grizzly bears, provide an up-to-date record of grizzly bear/livestock conflicts and management removals of

grizzly bears related to livestock grazing in the action area. The Forest shall notify the Service's Montana Field Office within 72 hours of notification of any livestock depredation by grizzly bears. The Forest shall notify the Service's Montana Field Office if a change in the status of sheep grazing in the action area is being considered.

5. To gauge the validity of our assumptions that (1) unauthorized motorized access would most likely result in temporary effects to grizzly bears and (2) when unauthorized 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 unauthorized motorized access that occurred during the preceding calendar year and how the Forest responded. Include information such as (but not limited to): the location of unauthorized motorized access, the type of barrier breached, how the barrier was breached, the date the Forest became aware of the unauthorized l motorized access, how the Forest responded to the unauthorized 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 2021 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 existing secure habitat in the GBAUs (non-winter motorized access), temporary effects to OMRD, TMRD, or secure core in the recovery zone or temporary effects to secure habitat in the GBAUs, modeled denning habitat (winter motorized access), and habituation and/or modification of natural feeding behavior associated with livestock grazing.

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. We have included reasonable and prudent measures along with terms and conditions in this incidental take statement, as well as reporting requirements that detail the progress of the action in order to monitor the impacts of incidental take. 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 road 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 road 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.

4. Bear aware education for Forest visitors (including hikers, bikers, hunters, campers, and snowmobilers, among others), Forest staff, and contractors, continues to be an important part of reducing negative human-bear interactions. Continue to work collaboratively with the Interagency Grizzly Bear Committee, Montana Fish Wildlife and Parks bear management specialists, U.S. Fish and Wildlife Service grizzly bear specialists, and non-government organizations to promote training in the use of bear spray, bear identification, and ways to reduce conflicts with and mortality of grizzly bears.

REINITIATION NOTICE

This concludes consultation on the effects of the 2021 Forest Plan on grizzly bears. As provided in 50 C.F.R. § 402.16, reinitiation of consultation is required 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. The Service retains the responsibility to notify the Forest if we conclude that circumstances appear to warrant a reinitiation of consultation.

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