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 Beaverhead-Deerlodge National Forest
Ecos # 2025-0053125 (BDNF Forest Plan Grizzly Bears)

February 7, 2025

Alfred Watson, Forest Supervisor
Beaverhead-Deerlodge National Forest
420 Barrett Street
Dillon, Montana 59725

Dear Mr. Watson:

The U.S. Fish and Wildlife Service (Service) has reviewed your July 23, 2024, biological assessment regarding reinitiation of consultation on the effects of the Beaverhead-Deerlodge 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 2024 biological assessment and additional information received during the consultation process. The biological opinion was prepared in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

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

Sincerely,

BENJAMIN CONARD

Digitally signed by BENJAMIN CONARD
Date: 2025.02.07 14:39:13 -07'00'

for Amity Bass
Office Supervisor

ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

BIOLOGICAL OPINION

on the

Effects of the Beaverhead-Deerlodge National Forest Plan on Grizzly Bears

Agency:	U.S. Department of Agriculture Forest Service Beaverhead-Deerlodge National Forest Dillon, Montana
Consultation Conducted by:	U.S. Fish and Wildlife Service Montana Field Office Helena, Montana
Date Issued:	January 7, 2025

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INTRODUCTION

This biological opinion was prepared by the U.S. Fish and Wildlife Service (Service) and analyzes the effects of the 2009 Forest Plan (Forest Plan) for the Beaverhead-Deerlodge National Forest (Forest) on grizzly bears (*Ursus arctos horribilis*). The Forest is re-initiating consultation on the Forest Plan for grizzly bears because: 1) the Forest consulted on the maximum motorized access take specified in the 2013 biological opinion; 2) a new methodology is being used throughout the Forest Service Region 1 for assessing the effects of motorized access on grizzly bears for purposes of project level analysis (see Appendix A of the biological assessment; U.S. Forest Service 2024) and a new baseline has been established; and 3) it is anticipated the continued expansion of grizzly bears and subsequent home range establishment on the Forest may result in some effects not previously considered. The Service received a final biological assessment on July 23, 2024. We continued to receive information regarding this consultation through December 9, 2024.

Section 7(b)(3)(A) of the Endangered Species Act of 1973, as amended (Act) requires that the Secretary of the Interior issue biological opinions on federal agency actions that may adversely affect listed species or critical habitat. Biological opinions determine if the action proposed by the action agency is likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Section 7(b)(3)(A) of the Act also requires the Secretary to suggest reasonable and prudent alternatives to any action that is found likely to result in jeopardy or adverse modification of critical habitat, if any has been designated. If the Secretary determines "no jeopardy", then regulations implementing the Act (50 C.F.R. § 402.14) further require the Director to specify "reasonable and prudent measures" and "terms and conditions" necessary or appropriate to minimize the impact of any incidental take resulting from the action(s). This biological opinion addresses only impacts to federally listed species and does not address the overall environmental acceptability of the proposed action.

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

Consultation History

Reinitiation of informal consultation on the Forest Plan began between the Forest and the Service in 2021, with discussions on delineating grizzly bear analysis units (GBAUs) across the Forest and using a new methodology for analyzing the effects to grizzly bears associated with motorized access. The Forest began developing the process to delineate GBAUs in 2021 and finalized their GBAU process paper in December of 2022. The Forest continued informal consultation with the Service on reinitiation of consultation on the Forest Plan through 2023 and initiated formal consultation in August of 2023. Ongoing consultation continued and the Service received the final biological assessment and request for consultation on the effects of the Forest Plan on July 23, 2024 (U.S. Forest Service 2024), which is incorporated here by reference. The Forest Plan has been through several consultation processes since the 2009. Pages 3 through 7 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 December 9, 2024.

In addition to the new methodology being used to analyze the effects of motorized access on grizzly bears, the Forest also reached the amount of incidental take anticipated associated with temporary road construction as described in the surrogate measures of incidental take in the 2013 biological opinion (U.S. Fish and Wildlife Service 2013). While the number of planned miles that were consulted on has reached the amount of the surrogate measure of incidental take, the miles of implemented temporary roads has not. The Forest has only implemented 37.6 miles of the planned temporary roads (see Table 1 in the biological assessment; U.S. Forest Service 2024), which equates to 54 percent of the miles permitted under the surrogate measure of take (as of March 2024).

As mentioned, the Forest finalized the delineation of their GBAUs and a secure habitat model in 2022. GBAU delineations are for the purpose of maintaining consistent analysis boundaries, which allows for effects to secure habitat from projects to be consistently analyzed over time and across the landscape. Analyzing secure habitat within GBAUs provides an updated baseline condition for grizzly bears on the Forest. In 2023, as part of the travel management planning effort, the Forest improved the baseline information for on-the-ground road conditions by describing the location and use of all currently known roads and routes, including those created by public users. This information was incorporated into the baseline secure habitat information for this analysis (*Ibid*.).

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 2013 biological opinion on the Forest Plan, as described below. This new biological opinion also supersedes the 2021 biological opinion on livestock grazing in the Yellowstone analysis area to consolidate biological opinions. 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 2009 Forest Plan. The Forest Plan established direction for all resource management activities on the Forest and identified forest-wide desired future conditions, goals, objectives, and standards for a variety of social values and environmental factors. These values and factors include air quality, American Indian rights and interests, aquatic resources, economics and social values, fire management, heritage resources, infrastructure, lands, livestock grazing, minerals (including oil and gas), recreation and travel management, scenic resources, soils, special designations (e.g., wilderness, national scenic trails, historic sites, scenic byways, and research natural areas), timber management, vegetation, and wildlife habitat. Not all of these factors would impact grizzly bears or their habitat.

In general, the forest plan contains the following direction:

- Goals, which are general descriptions of desired results to be achieved sometime in the future with no specific date and are used to develop objectives;

- Objectives form the basis for site-specific project planning by providing concise and measurable statements to achieve goals; and
- Standards, which are mandatory constraints applied to projects to meet or maintain the desired condition or conditions, avoid or mitigate undesirable effects, or meet legal requirements.

Eight key areas in the revised plan considered in this analysis include aquatic management, vegetation management (including timber), fire management (including fuels), lands, range management (including grazing), recreation and travel management, minerals (including oil and gas), and wildlife management. A complete list of forest plan goals, objectives, and standards that are relevant to grizzly bear management are available in Appendix C of the biological assessment (U.S. Forest Service 2024).

The life of the Forest Plan serves as the temporal bounds for this analysis. Because timeframes for amendment or revision of the Plan are uncertain, this analysis uses twelve years or 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.

The Forest Plan is considered a framework programmatic action. It does not authorize, fund, or carry out an action but provides direction for future actions that may be authorized, funded, or carried out by the Forest. Therefore, any action subsequently authorized, funded, or carried out under the Forest Plan, will be addressed in subsequent tiered or stand-alone section 7 consultations, as appropriate. Types of activities subsequently authorized, funded, or carried out under the Forest Plan that may affect grizzly bears are described in the biological assessment prepared for the Forest Plan, which is hereby incorporated by reference (U.S. Forest Service 2024).

STATUS OF THE SPECIES

No critical habitat has been designated for grizzly bears. For information on the status of grizzly bears, including regulatory history, species description, life history, and status and distribution, refer to the Grizzly Bear Recovery Plan (U.S. Fish and Wildlife Service 1993), the grizzly bear 5-year status review (U.S. Fish and Wildlife Service 2021), the species status assessment (SSA) for grizzly bears (U.S. Fish and Wildlife Service 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 was 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 continued implementation of the Forest Plan would likely adversely affect individual grizzly bears. Therefore, formal consultation with the Service was initiated and this biological opinion has been written to determine whether or not activities associated with this action are likely to jeopardize the continued existence of grizzly bears. Grizzly bears are listed as threatened under the Act. Critical habitat has not been designated for this species, therefore none would be affected by the proposed action.

ENVIRONMENTAL BASELINE

Under the provisions of section 7(a)(2), when considering the "effects of the action" on listed species, the Service is required to consider the environmental baseline. Regulations

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

Action area, as defined by the Act, is the entire area affected directly or indirectly by the federal action and not merely the immediate area involved in the action. The Forest covers 3.39 million acres within portions of Beaverhead, Deer Lodge, Gallatin, Granite, Jefferson, Madison, Powell, and Silver Bow Counties and is managed as five ranger districts including the Dillon, Wisdom, Butte, Madison, and Pintler Ranger Districts. For the purposes of this biological opinion, the action area for the analysis of effects of the Forest Plan includes all Forest land within the administrative boundaries of the Forest with the exception of the Elkhorns Landscape. The Helena-Lewis and Clark National Forest jointly manages activities in the Elkhorns Landscape. Because the Helena-Lewis and Clark National Forest includes the Elkhorns Landscape in their Forest Plan, this area is not included within the action area for the consultation on the Beaverhead-Deerlodge Forest Plan.

The mountain ranges on the Forest include developed recreation areas, Wilderness, and roadless areas. Elevations range from cold desert at 5,000 to 6,500 feet to true alpine habitat types at more than 10,000 feet. The Forest features a variety of habitat types, including forest, meadows, sagebrush, and grasslands, all which provide a range of wildlife habitats.

Portions of the Forest are located within two grizzly bear ecosystems: the GYE and the NCDE. Within the GYE, the Forest overlaps with a small portion of the recovery zone and a portion of the demographic monitoring area (DMA). The Madison Ranger District is the only area of the Forest that overlaps with the recovery zone and includes portions of the Hilgard #1 grizzly bear subunit. Furthermore, a portion of the Gravelly Landscape is within the GYE DMA. Grizzly bears are also frequently documented on the Madison Ranger District outside of the GYE recovery zone and DMA. Within the NCDE, the Forest intersects with NCDE Management Zone 2 (NCDE Zone 2), which is managed to provide the opportunity for grizzly bears to move between the NCDE and adjacent ecosystems by managing resources and recreation and allow agencies to respond to demonstrated conflicts. Management direction emphasizes conflict prevention and response, including attractant storage rules (Northern Continental Divide Ecosystem Subcommittee 2020). NCDE Zone 2 may also provide genetic connectivity between the NCDE and the GYE, although genetic combinations between these two areas have not been discovered yet (Costello et al. 2024). The area overlapping NCDE Zone 2 includes portions of the Butte and Pintler Ranger Districts. The remainder of the Forest is located outside of these ecosystems but may serve as linkage and distribution areas for both populations.

With the exception of the Hilgard #1 subunit, the remaining portions of the Forest occur outside of recovery zones and have been delineated into GBAUs, 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 effects to grizzly bears over space and time. They do not represent actual grizzly bear home ranges or imply that occupancy or occurrence by grizzly bears is expected or required. 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. Female grizzly bear home ranges vary based on location, with areas between 26 and 94 square miles used in the NCDE (Northern Continental Divide Ecosystem Subcommittee 2020) and between 100 and 150 square miles in the GYE (Bjornlie et al. 2014). Because the Forest is located between these two ecosystems and grizzly bear sightings have increased, the Forest decided to use 100 square miles as the minimum GBAU size. In addition, habitat, food sources, and elevations of the Forest are generally more similar to the GYE compared to the NCDE.

The 2022 GBAU and secure habitat development effort resulted in the delineation of 43 GBAUs on the Forest outside of the recovery zone. Of these, seven GBAUs did not meet the 100 square mile area guidance for size because of the shape of the administrative boundary (Governor, Upper Horse Prairie, Lee Metcalf North, Lee Metcalf South, Meadow Creek, Mill Creek, and Stony GBAUs). In these instances, the Forest may consider using more than one GBAU to disclose effects to grizzly bears during project-specific analyses.

Status of the Species within the Action Area

As mentioned, the Forest is situated between the NCDE and the GYE with grizzly bear distribution gradually expanding towards one another (U.S. Forest Service 2024). The only recovery zone subunit that occurs on the Forest is the Hilgard #1 subunit in the GYE recovery zone. To date, no interbreeding of bears between the NCDE and the GYE have been observed. However, recent models suggest bears may use mountain ranges on the Forest to connect populations between the GYE and NCDE (Sells et al. 2023). Grizzly bears continue to disperse further onto the Forest and may be present throughout most of the Forest with varying levels of occurrence ranging from a high likelihood in some areas, including residents, and a very low likelihood or transient use in others. The likelihood of grizzly bear presence is likely to increase over time as grizzly bear populations continue to increase and expand. New verified sightings continue to occur, especially in areas along the Big Hole (areas south, west, and north of Wisdom, Montana). For purposes of this analysis, grizzly bears may be present anywhere on the Forest.

In addition to tracking verified sightings, the Service's Grizzly Bear Recovery program, in partnership with other agencies, conducts genetic sampling efforts and collared bear studies. The Beaverhead Mountains, Pioneer Mountains, Pintler Range, Anaconda Range, Flint Creek Range, and Sapphire Mountains on the Forest are a focus for formalized sampling efforts (among other areas on adjacent National Forests) for the Southwest Montana Grizzly Bear DNA study, which determines where bears are dispersing from. In 2020, a grizzly bear was detected via a remote camera in the Big Hole Valley. DNA analysis verified that this male bear was from the NCDE (Costello and Roberts 2022). In 2020 and 2021, DNA analysis and collared bear data documented that three NCDE males moved outside of the management zones and were present on the Forest at one time or another (*Ibid*.). Although the Service did not collect any grizzly bear genetic samples on the Forest in 2021 or 2022 as part of the Southwest Montana study, two male grizzly bears were detected for the first time within historic range on the Bitterroot National

Forest (adjacent to the Forest) in 2022. The Forest will continue to support ongoing research efforts to obtain genetic and distribution information for this species.

In some areas of the Forest either no grizzly bears have been verified or only male transients or dispersers have been verified. In these areas, where numbers of grizzly bears are likely low to very low or none, numbers are expected to increase relatively slowly over time. This is especially true for female grizzly bears. As described in Proctor et al. (2012), males move more frequently and over longer distances than females. Males have large home ranges and establish home ranges nearly three times further away from their mother's home ranges than do female offspring. Females usually establish smaller home ranges than males that overlap with their mother's home range (Waser and Jones 1983; Schwartz et al. 2003). In doing so, they generally disperse over much shorter distances than male grizzly bears (McLellan and Hovey 2001; Proctor et al. 2004). Therefore, female dispersal is a multi-generational process where females must live year-round in an area, successfully reproduce, and offspring disperse into adjacent, unoccupied habitat. Thus, female grizzly bear presence in portions of the action area is likely to increase only slowly over time.

Factors Affecting Species Environment within the Action Area

This section identifies and describes key areas of the existing Forest Plan management that affect the grizzly bears' environment. These factors include access management, food and attractant management and developed sites, livestock management, vegetation and fire management, and energy and mineral development. Existing 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 2024). 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.

<u>Motorized Access Management</u>

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.

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 GYE recovery zone, the Forest manages a portion of the Hilgard #1 subunit. The conditions of the entire subunit associated with motorized access are included in the biological assessment (U.S. Forest Service 2024). No motorized routes occur within the Forest's

portion of the Hilgard #1 subunit. Therefore, open motorized access route density (OMARD) and total motorized access route density (TMARD) are zero for that portion of the subunit. Some roads outside of and immediately adjacent to the subunit influence secure habitat on the Forest's portion of the subunit, however, 90 percent of the Forest within the subunit is secure habitat. Access management within the recovery zone is not likely resulting in adverse impacts to grizzly bears.

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. A small portion of the Forest is located within NCDE zone 2 and none of the Forest is located within NCDE zone 3. The remainder of the action area outside of the recovery zones is also outside of the NCDE zones. The Forest Plan does not require motorized access management in NCDE zone 2 or in areas outside of these designations nor is the Forest required to provide secure habitat in these areas.

With the exception of the subunit within the GYE recovery zone, we previously analyzed portions of the action area using open motorized road and trail densities (OMRTD). OMRTD was calculated for the landscapes across the Forest for the summer season (5/16 to 10/14) and for the hunting units across the Forest for the fall season (10/15 to 12/1). OMRTD in the fall is reduced from those in the summer in order to increase wildlife security during the general hunting season. Providing 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 this information provides a useful threshold to describe human-caused effects to grizzly bears based on existing literature, motorized route density or acreage alone fails to consider how road placement affects habitat patch size (Proctor et al. 2019). For example, portions of the GBAUs may have high route densities (even within the GBAUs with lower overall linear route densities) while other portions of the GBAUs may have low route densities or even no motorized routes (even within the GBAUs with higher overall linear route densities). In other words, even in a GBAU with overall low route density, patches of high route density areas may be interspersed with patches of low route density or unroaded areas or in a GBAU with overall high route density, patches of low route density or unroaded areas may be interspersed with patches of high route density.

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 secure areas may be critically important in terms of the degree to which bears may be affected by motorized access. In other words, the key to limiting impacts of roads on bears is tied to availability, location, and distribution of secure habitat that is a function of not simply numeric density of motorized routes, but the spatial arrangement in which they occur.

Open motorized road and trail density and route lengths within grizzly bear analysis units are provided in table 21 of the biological assessment (U.S. Forest Service 2024). While secure habitat is directly tied to and based on open and restricted motorized routes, it more adequately represents the potential effects to grizzly bears related to motorized access as it provides a more accurate indication of the spatial mix of motorized routes and secure habitat. For example, measurements of route density in situations of uniformly spaced roads, even at an otherwise acceptable route density, can provide very limited patches of secure habitat that are functionally useful for grizzly bears (Proctor et al. 2019). Similarly, large patches of important habitat may be available in areas with high road densities if roads are concentrated in specific areas. Accordingly, we have incorporated secure habitat into this analysis.

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

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

Currently page 53 of the Forest Plan serves as the interim baseline from which road and trail densities and associated metrics are calculated until the Forest completes site-specific travel management (with the exception of the Madison Ranger District which completed this analysis in 2011). Page 53 in the Forest Plan includes all known inventoried routes when the plan was written, including:

- System routes (roads and trails with a use designation where activities and maintenance can occur on the Forest; referred to as National Forest System roads and trails);
- Other system routes (roads and trails under other management, including county, state, interstate, or other agencies, roads and trails on private lands); and
- Undetermined routes (non-system roads and trails, including user-created routes).

More specifically, mode of travel (motorized or non-motorized) and season of use (open year-long or seasonal closure) for routes identified on page 53 are determined by the most current travel map, travel map addendums, forest plan motorized or non-motorized allocation types, permits, orders, or other authorities identifying access and use types. If a route is discovered on the landscape but it is not identified on page 53, it is considered "undetermined" and is legally closed by direction in the Forest Plan.

Secure habitat is calculated by placing buffers around any road or trail where motorized access is *possible*. This calculation uses system and non-system routes where motorized access is

permitted during all or part of the year, gated routes, undetermined routes not identified on page 53, routes that are discovered during project planning, and user-created routes that may be used in a frequent or chronic manner. This calculation does not include roads and trails where ground-truthing reveals conditions impassible to motorized vehicles (e.g. permanent barriers without breaches, decommissioned roads and trails without motorized access, and other situations). Additional clarification is provided in Appendix A of the biological assessment for this metric (U.S. Forest Service 2024).

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 zones. The Forest is expected to update the secure habitat metrics as they update their access data during site-specific project planning in order to more accurately portray what is existing on the ground at the time of this consultation. 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.

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 maximum acres of secure habitat affected via motorized access are calculated from an updated baseline which includes ongoing projects (where consultations previously occurred and implementation is occurring, e.g. Pintler Face road re-routes), projects with a signed decision where implementation has not yet started (e.g. Greenhorns), and data updates derived from the Travel Management process (refer to the Travel Management section of the biological assessment for additional details). Ongoing projects and those with a signed decision that result in temporary impacts to secure habitat are identified in Table 3 of the biological assessment (U.S. Forest Service 2024). The final on-the-ground results to secure habitat from these projects were incorporated into the "existing secure area baseline" as identified in Table 4 of the biological assessment (*Ibid*.).

Approximately 1,464,226 acres of secure habitat have been modeled on Forest land outside of the recovery zone (44 percent of Forest land within all GBAUs combined). Secure habitat calculations on the Forest excludes the Elkhorns as this 33,527-acre area is managed by the Helena, Lewis and Clark National Forest. Further, non-contiguous, isolated parcels of the Forest (a total of 5,474 acres) are typically small sections (quarter acre or less) surrounded by private lands, which are not considered secure due to their size and existing private lands around them. Examples of these scattered, isolated parcels include sections in Butte Valley or the three-acre parcel located in Wisdom that houses the district office (U.S. Forest Service 2024). The approximate existing amount of secure habitat on Forest land within the GBAUs is displayed in Table 1; percentages are rounded to the nearest whole number.

Motorized route densities outside the recovery zone are typically higher due to the varied ownerships, the long history of various human uses, and their proximity to human population centers, which are typically located away from large blocks of unroaded habitat such as wilderness. As such, the amount of secure habitat outside of the recovery zones is typically much lower than the amount within the recovery zones. The amount of secure habitat on Forest land varies greatly among GBAUs with a range from a low of 16 percent of Forest land in a GBAU (13 percent of the entire GBAU) to a high of 83 percent of Forest land in a GBAU (82 percent of the entire GBAU) (see Table 1). As previously mentioned, the amount of secure habitat also varies spatially within a GBAU, with higher amounts in some portions of a GBAU 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. For example, 21 percent of the Forest lands in the Basin GBAU is providing secure habitat and now completely intersects with the NCDE distribution area and the West Flints GBAU was partially intersected by the distribution line in 2017 and contains only 19 percent secure habitat on Forest lands (U.S. Forest Service 2024).

Table 1. Estimated existing secure habitat within the GBAUs (U.S. Forest Service 2024).

GBAU	GBAU Total Acres	Acres of Forest Land in GBAU	Acres of Forest Land in Secure Habitat	Percent of Forest land in GBAU in Secure Habitat
Fleecer	102,597	99,024	23,090	23/23
Pintler	86,885	84,969	65,394	75/77
Ruby	92,669	90,549	52,943	57/58
Seymour	66,764	66,188	46,334	69/70
Tie	89,163	88,713	33,126	37/37
Upper Big Hole	93,269	90,045	40,348	43/45
Basin	74,723	66,916	13,722	18/21
Little Boulder	72,508	69,050	25,314	35/37
Upper Boulder	69,366	63,064	14,399	21/23
Dry Cottonwood	83,334	66,939	10,547	13/16
East Flints	64,827	60,517	32,112	50/53
Georgetown	86,081	70,857	33,621	39/47
Harvey Willow	108,448	100,013	30,145	28/30
South Flints	96,516	74,881	19,407	20/26
West Flints	98,411	83,735	15,968	16/19
Black Butte	91,232	91,023	56,881	62/62
Greenhorns	70,887	70,305	37,226	53/53
Snowcrest	105,007	103,851	73,836	70/71
Wall Creek	93,181	91,846	53,404	57/58
West Fork Madison	114,246	112,400	52,912	46/47
Bull	64,482	50,309	10,609	17/21
Highland	109,013	101,476	26,460	24/26
O'Neill	75,819	72,586	25,884	34/36
Governor	55,995	55,875	28,376	51/51
Medicine Lodge	88,695	87,381	36,797	42/42
Muddy Creek	71,125	70,804	16,060	23/23
Selway	84,283	81,599	31,818	38/39
Sheep Creek	89,976	88,690	39,861	44/45
Upper Horse Prairie	23,211	23,211	7,487	32/32
Lee Metcalf North	51,663	22,274	14,634	28/66
Lee Metcalf South	32,949	32,316	26,878	82/83
Birch Creek	92,307	90,189	32,018	35/36
Browns Lake	110,463	109,359	61,390	56/56
Bryant Creek	98,450	98,009	40,369	41/41
Maverick	92,398	90,764	57,477	62/63
Pettengill	99,509	98,987	59,907	60/61
Quartz Hill	90,623	86,608	35,013	39/40
Meadow Creek	60,083	58,161	20,298	34/35
Mill Creek	59,160	56,354	20,201	34/36
South Boulder	68,244	59,476	22,876	34/38
Copper	88,946	84,875	45,512	51/54
Ross Fork	89,850	85,606	53,631	60/63
Stony	50,184	45,370	19,941	40/44
Total	3,507,542	3,295,164	1,464,226	42/44

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.

The Forest manages two Congressionally designated Wilderness areas. The Lee Metcalf Wilderness is divided into four separate units in the Madison Range on the east side of the Forest. The Anaconda Pintler Wilderness is in the Pintler Range on the northwest side of the Forest. Several areas of Recommended Wilderness are dispersed throughout the Forest, ranging in size from approximately 1,900 to 89,000 acres. Thirteen percent of the Forest consists of Wilderness or Recommended Wilderness. These areas are non-motorized and provide some level of habitat security for grizzly bears by prohibiting motorized and mechanized travel and by limiting other activities. The Forest also contains two Wilderness Study Areas, which are required for the study of wilderness suitability under the Montana Wilderness Study Act of 1977. This act requires the study of certain lands to determine their suitability for designation of Wilderness by Congress. Figure 8 of the biological assessment displays the distribution of Wilderness, Recommended Wilderness, and Wilderness Study Areas on the Forest. Wilderness Study Areas may or may not allow motorized use in either season based on the Montana Wilderness Study Act. Corresponding Forest Plan guidance for Wilderness, Recommended Wilderness, and Wilderness Study Areas are included in the biological assessment.

Various settings are provided in Wilderness or recommended Wilderness, depending on the classification. In Wilderness (as designated by Congress), primitive and semi-primitive nonmotorized settings are provided, which offers foot, stock, ski, snowshoe travel, dispersed camping, hunting, fishing, and other activities approved in this area. Similarly, in Recommended Wilderness areas, semi-primitive non-motorized settings are provided and offer opportunities for foot, stock, ski, snowshoe, dispersed camping, and others. The Forest has both motorized and non-motorized Wilderness Study Areas, which support semi-primitive nonmotorized or motorized settings and offers opportunities for wheeled motorized travel on designated routes, where permitted. In winter motorized Wilderness Study Areas, snowmobiling may occur from December 1 through May 15.

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 a route is driven using a motorized vehicle 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). 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 the Consultation Handbook (U.S. Fish and Wildlife Service, National Marine Fisheries Service 1998) as: all activities or programs of any kind *authorized, funded, and/or carried out*, in whole or in part, *by Federal agencies* in the United States or upon the high seas

(emphasis added). These and any other illegal 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 from 2021 through 2023 revealed 50 unauthorized motorized access violations across the Forest (see Table 22 in the biological assessment; U.S. Forest Service 2024). Examples of these violations include motorized cross-country travel and motorized use within non-motorized areas where signs were present (including Wilderness and recommended wilderness). Spatial mapping of the locations revealed four cross-country travel violations (two in 2021 and one each in 2022 and 2023) near or on the Lower Whitetail Road on Butte Ranger District, but the rest were well-distributed across the Forest. Another instance in 2022 on the Dillon Ranger District in Chute Canyon identified multiple motor vehicle tracks on a user-created route along a ridgeline with removal of the closure sign, likely resulting in multiple unauthorized motorized violations. Chronic unauthorized motorized access occurs regularly within the Pipestone area on the Butte Ranger District (primarily by off-road vehicles). This area contains a large network of user-created motorized routes and trails. The Forest cannot use IGBC barriers, fences, or other barricades to control motorized access at Pipestone due to the existing topography (flat and open) and lack of vegetation. However, the Forest identified known user-created routes frequently used in this area and applied the road buffer to model secure habitat within this area. Additional unknown unauthorized motorized access (either in new areas or repeated use) likely occurred on the Forest during this time, although it remains unreported to law enforcement and the Forest.

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.

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.). In these instances, the Forest responds to such unauthorized access to the best of its ability by placing signs, removing access, or other means to deter motorized use. If a project is occurring within these places, the Forest will consider the areas adjacent to these undetermined roads as not providing secure habitat for grizzly bears and a site-specific analysis will occur (U.S. Forest Service 2024).

Historically, when unauthorized motorized access is discovered in project areas, the Forest addresses these issues through corrective actions such as issuing tickets to the parties, signing the

area with a clear notice that motorized use is prohibited, replacing broken locks, 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 (Interagency Grizzly Bear Committee 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.

Other unauthorized motorized use is associated with temporary and intermittent off-road driving in areas that do not have roads, such as meadows. 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 can provide an effective form of enforcement, in addition to writing citations, as most people are not knowingly violating the travel restrictions.

The unauthorized motorized access situations in the action area are typical of what would be expected for a National Forest in Montana. While closure devises 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.

While not in the baseline, it is worth mentioning that the travel management process on the Forest has begun. Gate and barrier monitoring on the Forest is ongoing and will be part of the process. In the near future, the Forest will implement a forest-wide trespass monitoring and response plan that will track instances of unauthorized motorized use across the Forest (not just in project areas). This will enable the forest to respond accordingly, which may include immediate actions (such as law enforcement response, signage, barricades, etc.), intermediate actions (such as identifying locations for closures and associated analysis, as required), or long-term actions (such as monitoring to determine the extent and nature of the unauthorized trespass), among others. This tracking system will help the Forest document and identify areas of frequent illegal access and use the most effective management strategy. While it is worth noting this information, the effects analysis and jeopardy determination do not rely on this information.

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 older statement 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. 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, with the exception of the undetermined routes discussed above, we assume that other 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. Nonetheless, any disturbance impacts associated with unauthorized motorized access is expected to be spatially disparate, short-term, and temporary 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; moreover, most Forest users follow travel regulations. 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).

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 unauthorized motorized use is typically spatially disparate, short-term, and temporary in the majority of situations of unauthorized motorized access. 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 and GYE 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.

Winter Motorized and Non-Motorized Use

Winter motorized travel on the Forest is managed from December 2 through May 15. A variety of motorized activities can occur within winter recreation allocations, including snowmobiles, ATV and motorcycle riding, four-wheeling, and scenic driving, among others, although these activities may be limited to specific areas (e.g., outside of designated and recommended wilderness) and restricted by season of use. In addition to recreation over-snow use, motorized over-snow travel is permitted as part of lands and recreation special uses for infrastructure and administrative maintenance.

The Forest modeled denning habitat within their portion of the Hilgard #1 subunit within the recovery zone. Approximately 16,742 acres of modeled denning habitat occurs on the Forest's portion of the Hilgard #1 subunit. The Forest estimated that approximately 341 acres of winter motorized travel overlaps modeled grizzly bear denning habitat in the Hilgard #1 subunit. This is a very small portion of the Hilgard #1 subunit and no significant effects associated with winter motorized use are expected.

As the grizzly bear population continues to grow and expand, grizzly bears could den within areas not previously known to have active grizzly bear denning. Grizzly bears are quite variable in their selection of denning habitat and structures (Schwartz et al. 2003). Across the Forest, outside of the recovery zone (within the GBAUs), approximately 483,016 acres are modeled as grizzly bear denning habitat, which equates to about 13 percent of the GBAUs outside of the recovery zone (Table 2). Denning habitat within individual GBAUs ranges from approximately 1 to 32 percent. Denning habitat is not considered limited in the GYE or NCDE (U.S. Fish and Wildlife Service 2022) and grizzly bears typically do not reuse dens although will den in the same general areas in successive years (Linnell et al. 2000). The active "bear year" for each ecosystem is defined by spring den emergence and fall entry into dens. On the Forest, this includes March 1 to November 1 for the GYE and April 15 to November 15 for the NCDE. For

the purposes of this analysis, the Forest uses the more conservative March 1 to November 1 as the active bear year and November through February as the denning season.

Table 2. Estimated modeled denning habitat in GBAUs that overlaps with winter motorized use through May 15 (U.S. Forest Service 2024).

GBAU	Denning Habitat in GBAU acres (percent of GBAU)	Denning Habitat Overlap with Winter Motorized acres (percent of denning habitat)	GBAU	Denning Habitat in GBAU acres (percent of GBAU)	Denning Habitat Overlap with Winter Motorized acres (percent of denning habitat)
Fleecer	4,753 (5%)	4,019 (4%)	O'Neill	4,343 (6%)	2,139 (3%)
Pintler	1,256 (1%)	686 (1%)	Governor	16,201 (29%)	11,457 (20%)
Ruby	24,016 (26%)	6,819 (7%)	Medicine Lodge	18,583 (21%)	14,731 (17%)
Seymour	892 (1%)	354 (1%)	Muddy Creek	12,167 (17%)	3,457 (5%)
Tie	1,574 (2%)	1,310 (1%)	Selway	14,300 (17%)	14,074 (17%)
Upper Big Hole	12,692 (14%)	9,092 (10%)	Sheep Creek	11,368 (13%)	2,955 (3%)
Basin	4,535 (6%)	2,909 (4%)	Upper Horse Prairie	7,527 (32%)	7,527 (32%)
Little Boulder	3,654 (5%)	2,525 (3%)	Lee Metcalf North	5,898 (11%)	503 (1%)
Upper Boulder	3,953 (6%)	1,634 (2%)	Lee Metcalf South	5,949 (18%)	265 (1%)
Dry Cottonwood	5,969 (7%)	5,896 (7%)	Birch Creek	24,641 (27%)	13,751 (15%)
East Flints	2,347 (4%)	1,739 (3%)	Browns Lake	31,263 (28%)	14,049 (13%)
Georgetown	1,234 (1%)	814 (1%)	Bryant Creek	28,471 (29%)	27,513 (28%)
Harvey Willow	10,273 (9%)	9,768 (9%)	Maverick	17,242 (19%)	14,299 (15%)
South Flints	3,570 (4%)	2,239 (2%)	Pettengill	24,828 (25%)	24,544 (25%)
West Flints	5,638 (6%)	5,527 (6%)	Quartz Hill	22,972 (25%)	12,617 (14%)
Black Butte	9,372 (10%)	6,816 (7%)	Meadow Creek	14,259 (24%)	7,479 (25%)
Greenhorns	17,352 (24%)	4,293 (6%)	Mill Creek	18,724 (32%)	15,631 (26%)
Snowcrest	21,350 (20%)	65 (<0%)	South Boulder	20,892 (31%)	5,140 (8%)
Wall Creek	16,138 (17%)	4,302 (5%)	Copper	2,318 (3%)	1,587 (2%)
West Fork Madison	11,091 (10%)	8,684 (8%)	Ross Fork	1,996 (2%)	1,125 (1%)
Bull	6,174 (10%)	2,330 (4%)	Stony	4,381 (9%)	1,520 (3%)
Highland	6,860 (6%)	1,975 (2%)	TOTAL	483,016 (13%)	280,159 (8%)

As winter motorized travel can occur on the Forest from December 2 to May 15, the Forest does have some areas where winter motorized travel may occur during the grizzly bear den emergence period. The Forest estimated the acres of overlap between denning habitat and winter motorized travel. Winter motorized travel overlaps approximately 8 percent (280,159 acres) of modeled grizzly bear denning habitat across the Forest outside of the recovery zone. See Table 2 for

amounts of denning habitat that overlap with winter motorized allocations within the GBAUs. In general, winter motorized use is well-distributed across the Forest, although the greatest intersection between denning habitat and motorized use occurs on the Dillon Ranger District, specifically the Pettengill and Bryant Creek adjacent GBAUs and the Selway and Upper Horse Prairie adjacent GBAUs (see Table 13 and Figure 7 of the biological assessment).

From a qualitative review, not all of these acres of cross-country over-snow vehicle use are available for winter motorized travel during den emergence due to the ruggedness of the terrain or other logistical limitations. Further, some areas may not be available to winter motorized travel after March 1st due to a lack of snow in some years. Impacts to grizzly bear associated with winter motorized travel may vary from none to insignificant to significant, dependent on site-specific information. In limited circumstances, where denning habitat overlaps winter motorized travel during the den emergence period, we conservatively estimate some level of potential for significant impacts to occur. These impacts are further described in the effects section below.

Winter non-motorized activities overlap approximately 15,615 acres of modeled grizzly bear denning habitat on the Forest's portion of the Hilgard #1 subunit. On the Forest outside of the recovery zone, winter non-motorized activities overlap approximately 6 percent (202,857 acres) of modeled grizzly bear denning habitat (reference Table 13 of the biological assessment). This use includes cross country skiing, ski touring, winter hiking, dog sledding, fat-tire biking, trapping, hunting, and fishing, among others. In general, non-motorized activities are permissible in all winter recreation allocations on 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 wildlife section of the forest plan contains a grizzly bear conflict objective. It states: implement food storage and sanitation orders in areas classified as occupied grizzly bear habitat. The Forest has a history of maintaining food storage orders to prevent bear-human conflict. Currently, the Forest has two active food storage orders: order 02-00-22-02 which applies to the entirety of the Forest with the exception of the Elkhorns (expires on December 1, 2026) and order R1-2023-02 which applies to the Elkhorn area of the Forest (expires on December 31, 2028). 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.

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 (refer to assumption 10 in the biological assessment). 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.

In addition to the food storage orders, the Forest is making a concerted effort to provide food storage signage and bear-proof storage infrastructure (e.g., meat poles, food lockers) in areas with frequent public use or within areas heavily used by grizzly bears. This effort is ongoing and the Forest continues to pursue funding and partners to support this effort. The Forest also provides bear-resistant food coolers (per IGBC recommendations) for public use through a check-out system at district offices. Additional items (such as electric fencing, hanging systems, etc.) are available or may become available in the future at district offices to promote safe backcountry food attractant options.

Developed recreation includes facilities and improvements managed by the Forest and special use permit holders. This includes campgrounds, day use areas, marinas, resorts, organization camps, rental cabins, roads and trails, and trailheads. Developed sites are used by the public year-round, although the heaviest use occurs during the summer season. Appendix E of the biological assessment contains a list of developed recreation sites by type and the activities associated with their use, maintenance, and operation.

Approximately 236 developed recreation sites occur on the Forest, including two downhill (alpine) ski areas. The developed site data used for this analysis is a combination of more recent GPS location data and legacy location data, which pre-dates GPS technology. The developed sites mapped with a legacy system do not have the precision to determine the overlap between site location and grizzly bear secure or denning habitat. Thus, the Forest assumes that some developed sites may be within secure habitat and are accessible by motorized means, such as rental cabins. Some developed recreation sites may be within denning habitat and may be

accessible via snowmobile. Reference Table 14 in the biological assessment for the number of sites per GBAU.

Multiple winter facilities are located on the Forest. Other than those that operate under a special use permit (refer to Recreation Special Uses below), the Forest, in cooperation with partners and volunteers, manages several Nordic ski areas with groomed and marked trails systems including Chief Joseph, Echo Lake, Sawmill, Elkhorn, Moulton, Birch Creek, and Thompson Park. One additional ski area, Homestake, is permitted under special uses (although included in the Developed Recreation analysis due to similar effects). These areas consist of designated (marked but not groomed) and groomed system trails, warming huts, vault toilets, and parking areas. Thompson Park's system of winter trails also includes opportunities for fat tire bike users on some of its groomed routes. Although use in Nordic areas is considered non-motorized, grooming is accomplished via motorized means (snowcats, groomers pulled by snowmobiles, etc.). Approximately 350 miles of trails on the Forest are groomed, authorized for grooming, or designated for Nordic, fat tire bike, or multi-use (e.g. snowmobiles, snowshoes, skiing, etc.). It is expected that each of these seven Nordic ski areas could expand groomed or designated routes over the life of the plan. Groomed snowmobile trails are not expected to expand over the life of the plan. Downhill ski areas may request new runs, changes to existing ski runs, and additional infrastructure within the life of this analysis, including snowmaking, vegetation management, and installation of facilities such as minor buildings or lifts.

In addition to developed recreation sites, administrative sites on the Forests include a variety of government-owned and maintained infrastructure including radio repeater sites, guard station cabins, ranger stations, pastures, gravel pits, helicopter pads (landing zones), boneyards (storage yards), and housing quarters located across the forest. These sites and structures play a critical role in the administration of the national forest and are permanent in nature, requiring year-round motorized access (including the use of helicopters). Associated activities include landscape maintenance, irrigation, fence and gate maintenance, painting, staining, hazard tree removal, clearing brush and vegetation around structures, grazing, reconstruction, paving, snow removal, sign installation and maintenance, septic and toilet pumping, water system maintenance, garbage service, trenching and digging (buried utility lines), use of heavy equipment, firewood cutting and storage, maintenance of solar arrays, propane tanks, and fuel storage.

Non-developed or dispersed recreation captures a variety of other activities that occur outside of developed sites, such as dispersed camping, boating (both motorized and non-motorized), horseback riding and pack stock use, hiking and backpacking, climbing, rock hounding, crystal mining, prospecting, geocaching, winter touring (snowshoeing, cross-country skiing, backcountry skiing, or dog sledding), hunting and fishing, drone use, photography, paragliding, hang-gliding, year-round off-highway vehicle use, driving for pleasure, and similar activities. Sometimes a combination of developed recreation (camping at a developed site) is paired with non-developed recreation activities (pack stock use) and vice versa (camping at a dispersed site but using system trails for a day hike).

While no infrastructure is associated with dispersed recreation, dispersed campsite inventories on the Forest, initiated in 2012, catalogued over 1,500 campsites, with the largest number on the Madison Ranger District and the smallest number on the Dillon Ranger District. This inventory has likely increased over time. Because these are not considered developed sites, and given the unregulated nature of dispersed campsites, the Forest does not regularly update inventory or data.

Information on capacity, frequency of use, and user groups associated with each site is not available. Many dispersed sites are within 300 feet of the existing motorized road prism. Beyond dispersed camping, it is not possible to quantify dispersed recreation, although it is reasonable to assume forest use will likely increase for these activities over the next 13 years.

Special uses include both commercial and non-commercial recreation opportunities such as outfitting and guiding (e.g., guided hunts, guided fishing, guided climbing, livery services, educational tours, wilderness skill courses), non-commercial group use (e.g., family reunions, off-highway vehicle club gatherings), competitive events (one-time and reoccurring), weddings, organization camps, recreation residences, resorts, archery ranges, and downhill and Nordic ski areas, among others.

The Forest currently authorizes 14 different types of recreation special uses. A variety of permit types authorizes diverse activities (described in Appendix E of the biological assessment) and range in term from a few days up to 40 years. Some authorizations provide for reissuance upon expiration (e.g., organization camps, recreation residences, outfitting and guiding, and winter resorts, while others are considered short-term or temporary in nature and require a new application from the proponent upon expiration (e.g., recreation events, temporary outfitting and guiding, non-commercial group use).

The BDNF currently authorizes 14 different types of recreation special uses. A variety of permit types authorizes diverse activities (see Appendix E in biological assessment) and range in term from a few days up to 40 years. Some authorizations provide for reissuance upon expiration (e.g., organization camps, recreation residences, outfitting and guiding, and winter resorts), while others are considered short-term or temporary in nature and require a new application from the proponent upon expiration (e.g., recreation events, temporary outfitting and guiding, non-commercial group use). The majority of recreation special uses occurs on existing roads, trails, and at developed recreation sites.

Permits issued for winter resorts (i.e., downhill ski areas) provide for reissuance upon expiration and are authorized for up to 40-year terms. Two downhill ski areas, Maverick Mountain and Discovery Ski Area, established in the 1960s and 1970s respectively, operate on the Forest. The Discovery Ski Area boundary is approximately 2,200 acres with over 80 percent on National Forest System lands near the town of Philipsburg, Montana. Its operating season runs from late November to early April, depending on snow conditions. Discovery contains 8 lifts, 20 miles of cross-country trails, and supports a capacity of 2,150 daily visitors. During the 2018-2019 season (used as a proxy for current data as 2020 was a shortened season due to COVID-19 restrictions), an average of 616 people visited Discovery with a peak day of 1,975 skiers. Maverick Mountain, located on the south end of the Pioneer Mountains, operates on 525 acres on National Forest System lands. Maverick manages one ski lift, supports a daily capacity of 333 visitors, and shares a similar operating season with Discovery Ski Area. During the 2018-2019 season (used as a proxy for current data as 2020 was a shortened season), an average of 151 people visited Maverick with a peak day of 329 skiers. During and post-COVID pandemic, both ski areas experienced a significant increase in overall visitation, which has not subsided.

Until recently, these ski areas focused their efforts and infrastructure on winter recreation opportunities. With the passage of the Ski Area Recreational Opportunity Enhancement Act of 2011, the Secretary of Agriculture may now permit other seasonal or year-round recreational

activities in addition to skiing and other snow sports under ski area permits. The Act specifically identified what those non-snow sport activities could include, such as: zip lines, mountain bike terrain parks and trails, frisbee golf courses, and ropes courses. Discovery Ski Area currently has some summer operations, but those activities are not conducted on Forest lands. Both ski areas expressed interest in future summer operations on Forest lands.

In addition to these downhill ski areas, Homestake Lodge is the only permitted Nordic ski area on the Forest. Homestake Lodge is located on a private inholding but operates a system of groomed Nordic ski trails on adjacent Forest lands. Its permit authorizes night skiing, snow making, and recreation events and operates November through April, depending on snow conditions.

Similar to developed recreation sites, a majority of the areas associated with recreation special uses that involve infrastructure (concession campgrounds, marinas, resorts, recreation residences, ski areas, etc.) are not within grizzly bear secure habitat. However, some isolated cabins may occur within secure habitat if access is limited to hiking or skiing. Special uses that involve recreation events, such as one-time or multiple-day bicycle races, trail races, or other similar actions, may or may not occur within grizzly bear secure habitat, depending on the location of the activity.

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

Livestock Management

Twenty-eight percent of the Forest is capable of supporting livestock grazing. The Forest currently manages approximately 213 active allotments. Some additional allotments on the Forest are not currently active (i.e. vacant). An active allotment permits livestock grazing as a use by a specific business entity under terms and conditions identified in a term (generally 10 years) grazing permit and a vacant allotment is available for livestock grazing but does not have an issued term grazing permit. Within a given year, vacant allotments may be permitted and become active and active allotments may become vacant. Table 3 below displays the allotments by type and acreage. Livestock grazing generally occurs from the middle of June through early October. Habitat within allotments vary and may support grizzly bears at any given time depending on location. Cattle and horse livestock grazing is spread throughout the Forest and sheep and bison are also permitted on the Madison Ranger District. Livestock trailing occurs across the entirety of the Forest.

Table 3. Grazing allotment types and active acreages on the Forest as of August 2023 (U.S. Forest Service 2024).

Allotment Type	Number Active on Forest	Total Active Area (acres)	Number Vacant on Forest	Distribution Comments
Bison Only	1	3,733	0	Madison Ranger District
Cattle Only	178	1,878,348	3	Forest-wide
Horse Only	2	2,986	0	Wisdom Ranger District
Cattle/Horse	24	449,144	0	Forest-wide
Horse/Sheep	7	53,689	0	Madison Ranger District
Cattle/Horse/Sheep	1	55,949	0	Upper Ruby on the Madison Ranger District
Total	213	2,443,849	3	N/A

Livestock conflicts and depredations from grizzly bears has occurred on the Forest (see Table 10 of the biological assessment). From 2009 through 2023, 177 livestock conflicts (172 with cattle, 5 with sheep) have occurred on the Forest. During this same time-frame, management removal of 8 grizzly bears and mortality of 7 grizzly bears related to self-defense by livestock riders and/or herders occurred on the Forest (all on the Madison Ranger District in the GYE). While most of the livestock conflicts have occurred on the Madison Ranger District, 2 conflicts have also occurred on the Butte Ranger District in 2021 and 3 conflicts have occurred on the Wisdom Ranger District (1 in 2018 and 2 in 2022). No grizzly bears were removed as part of the livestock conflicts on the Butte or Wisdom Ranger Districts. The data associated with livestock conflicts and depredations for 2024 is not final as of the time of this writing. However, the Forest did provide information that one management removal mortality occurred in 2024 associated with grazing. One female with a cub of the year was removed due to repeated livestock depredations. Although the cub of the year was not removed, it was considered a probable mortality due to the young age of the bear.

Several range management conservation measures are provided as part of annual operating instructions for livestock permittees on the Forest. Refer to these measures in the Conservation Measures: Range Management section of the biological assessment (U.S. Forest Service 2024). These measures, when applied, can help to reduce conflicts between grizzly bears, ranchers and employees, and livestock.

As part of livestock management, range permittees maintain existing structures to properly manage permitted cattle, sheep, horses, and domestic bison. Examples of structures include water developments (e.g., spring developments, troughs, and buried pipelines), fences, shipping corrals, buildings for designated cow camps, and ponds. Activities may include off road travel with motorized equipment, tree removal (via chainsaw) for fallen trees on structures or pose substantial threats to a structure, sediment excavation from water sources, repair of broken pipe, placement of salt and minerals, and trough leveling. Existing range structures are generally replaced every 30 to 40 years due to deterioration from age (Bowey pers. comm. 2023a *in* U.S. Forest Service 2024). The number of utilized and functioning structures changes annually due to livestock location and number, accessibility, and environmental or human-caused degradation of infrastructure.

The overall impacts associated with existing livestock management have been adverse in some areas and insignificant in other depending on conflict situations and associated grizzly bear removals or relocations. General impacts related to livestock grazing are further described in the effects section below.

Vegetation and Fire Management

The Forest divides vegetation management areas into three categories: areas that are suitable for timber production (the management of tree stands for industrial or consumer use), areas unsuitable for timber production, but where harvest is allowed for another reason (managing fire risk, aspen restoration, salvage, etc.), and areas that are unsuitable for production and no harvest is allowed (fragile soils, wetlands, areas withdrawn by an act of Congress, etc.). In areas where harvest is permitted, a variety of methods may be used for tree removal, including: pre-commercial thinning (non-commercial; removal of individual or stands of trees before trees reach marketable maturity), regeneration harvest (commercial; clear cuts with reserves, shelterwood or seed tree cuts where there are little to no seedlings or saplings established in the understory), salvage harvest (commercial; intermediate harvest, where seedling, saplings, or residual stocking levels are sufficient for stocking purposes, generally at or above 200 trees per acre), and commercial thin harvest (commercial; intermediate harvest, leaving generally in the range of a density of 40-80 basal area, which equates to removing 30-70 percent of the pre-existing stand densities and is generally focused in Douglas-fir dominated vegetation types).

Timber management also includes conifer removal for research purposes (e.g., demonstration plots) or whitebark pine restoration. Vegetation management projects also include tree removal for aspen restoration, conifer encroachment, and special forest products. Harvest or public availability (via special forest products) of competing trees is considered a by-product of these activities. Other actions associated with timber and vegetation management that may affect grizzly bears or their habitat, such as temporary road construction, are described in different sections of this biological opinion.

The Forest commercially treats an average of 2,000 acres per year, with a general range between 1,500 to 2,500 acres. Of these, 40 to 80 percent (800 to 1,600 acres, based on the average) are in areas considered suitable for timber production with 20 to 60 percent (400 to 1,200 acres, based on the average) located in areas classified as not suitable, but harvest is permitted for other objectives. Although changes may occur, the October 2023 five-year program of work indicates this trend will continue (Brennick pers. comm. 2023 *in* U.S. Forest Service 2024).

Historically, fire suppression policies resulted in fire exclusion from most ecosystems on the Forest which resulted in overstocked and similar-aged forested stands. The Forest Plan addresses this condition by emphasizing hazardous fuels treatments in wildland-urban interface (WUI) areas and locations where existing tree stocking conditions exceed historical conditions. Fire management activities associated with Forest Plan actions that may affect bears and bear habitat on the Forest include fuels treatments (vegetation management in specific areas and planned ignitions, including prescribed fire) and wildland fire (unplanned ignitions).

Recent vegetative treatments focused on hazardous fuels reduction, timber harvest and subsequent burning, prescribed fires for wildlife habitat improvements (such as in aspen), and mechanical fuel removal. Prescribed fire plans are developed on the Forest to use fire

management as a vegetation management tool. Managing wildfires for multiple objectives remains an available option to meet Forest Plan vegetation objectives.

The Forest Plan allows for modified containment strategies (e.g., monitor, confine, and point or zone protection) to manage unplanned ignitions for multiple objectives. Some considerations used for deciding to use a modified containment strategy include: fire fighter safety, values at risk (includes wildlife habitat and silvicultural concerns), functional and objective concerns, cost, seasonal severity or timing, current and projected fire weather forecasts, natural and artificial barriers to fire spread, fire history information, and the overall projected fire size, growth intervals, and spread potential. Fire regimes are variable on the Forest and both frequent stand-replacing or mixed severity fires (0-100 plus years) and infrequent stand replacement (over 200 years) fires occur. From 1980-2022, wildfires burned a total of 424,131 acres on the Forest, including all fire severity classifications as well as overlapping places where more than one fire burned the same acres in separate years.

In general, fuel reduction projects are focused in areas with community wildfire protection plans within the WUI (U.S. Forest Service 2021 *in* U.S. Forest Service 2024). 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.

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 Exploration and Development

The production of oil and natural gas on federal lands is conducted through a leasing process under the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (PL 100–203). Mineral development refers to surface and underground hardrock mining and coal production, which is regulated by permits on National Forest System lands under the Mining Act of 1872, as amended through PL 103–66. The Mineral Materials Act of 1947, as amended through PL 96–470, provides for the sale or public giveaway of certain minerals such as sand or gravel. Activities associated with exploration, extraction, and reclamation of minerals, oil, and gas include the use of explosives, heavy equipment, pumping water, drilling, vegetation management, and creating or repair of roads. The Forest requires obliteration of pad sites after exploration, use, or leasing is complete.

In general, the potential for occurrence of oil and gas on the Forest is considered low or very low, although some areas have a moderate potential (U.S. Department of Agriculture 2009b *in* U.S. Forest Service 2024). Currently, no oil and gas projects are ongoing on the Forest, thus no ongoing impacts are occurring.

Areas of interest for oil and gas leasing include a portion of the Lima-Tendoy Mountains and the Big Hole Valley. Oil and gas exploration could consist of drilling one or more holes through

directional drilling on a single or multiple pad configuration. In 1995, a Reasonably Foreseeable Development (RFD) scenario predicted there would be low-level of drilling on the Forest and assumed up to ten wildcat and four development wells could be drilled over a fifteen-year period (U.S. Department of Agriculture 2009b *in* U.S. Forest Service 2024; which was reviewed in 2012 and still deemed sufficient). The majority of the wells would be dry holes (lasting only one year) unless the wells were productive. The RFD predicted foreseeable wells would require pads averaging 6.7 acres per well and changes to roads, although sites would be reclaimed after drilling.

More than half of Forest lands are considered favorable for one or more polymetallic locatable or precious mineral deposits, although demand is tied to economics and international markets. Most current mining activities on the Forest consist of short-term (one year or less) mineral, energy, or geophysical investigations and their incidental support activities typically occurring on small claims or exploratory drilling. These mining and associated activities are submitted to the Forest under a mining Plan of Operations or Notice of Intent with the exception of some small-scale mining exploration activities (locatable minerals, e.g. gold panning, metal detecting, rock hounding, etc.). These activities occur but are not possible to quantify due to the lack of permitting requirements under the law.

The Forest currently has 516 mining claims. Not all mining claims consist of active mines where activities may be occurring. Active mines require a Plan of Operation where effects to grizzly bears are evaluated. Eighty-eight mining claims occur within grizzly bear secure habitat. Mines or mining claims within grizzly bear secure habitat do not have motorized access and are generally single drill pits (which may require short-term motorized equipment), adits, or placer mines. The greatest numbers of mines that occur within secure habitat occur on the west side of the Forest in the Big Hole Landscape (19) and the Pioneer Landscape (17). Northern landscapes on the Forest that contain the most mines outside of secure habitat are the Clark Fork Flints (91) and Boulder River (76).

The Forest does not have any active large-scale mines, although four existing footprints occur under the Comprehensive Environmental Response, Compensation, and Liability Act (CERLCA; also known as superfund). Mines under remediation include Beal Mountain and Basin Creek, both on the Butte Ranger District. The two legacy superfund sites where cleanup is ongoing include Black Pine Mine on the Pintler Ranger District and Elkhorn Mine on the Wisdom Ranger District.

The Forest has not approved any large-scale mines since 2009, although small-scale exploration has occurred. Mining operations may require cross-country travel by vehicles and equipment, construction of less than one mile of low standard road or use and minor repair of existing roads. Footprints for these projects varies from a few square feet to hundreds of acres, depending on the mining project scale. Small minerals exploration projects are short-term, with exploration and reclamation typically occurring within the same year. Large scale operations may occur over a long duration and reclamation requirements may also vary depending on site-specific analysis. Generally, mining operations do not occur in winter but can occur depending on the project and outcome of project-specific analysis. Large-scale mining may require year-round use.

The Forest Service also permits removal of saleable or common variety minerals, such as sand, gravel, stone, clay, and decorative rock or landscaping stones. Due to changes in demand, the

yearly number of permits and volumes for saleable material is challenging to predict. However, the Forest is the primary user of borrow pit material for construction and maintenance of forest roads and facilities (U.S. Department of Agriculture 2009a *in* U.S. Forest Service 2024). This material occurs in varying locations in differing amounts across the Forest.

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 (reference pages 67 through 78 of the biological assessment; U.S. Forest Service 2024). 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*.). The only suggestion of human-caused population fragmentation within the NCDE is along the U.S. Highway 2 and BNSF rail line corridor between Glacier National Park and Forest Service lands (*Ibid*.).

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 GYE (Miller and Waits 2003). The NCDE appears to be more than capable of serving as a source population for other grizzly bear populations, including the GYE, based on its large, increasing population size and its expanding distribution (NCDE Subcommittee 2020). Several potential linkage areas have been identified that could facilitate the natural movement of grizzly bears into the GYE (Servheen et al. 2001). Peck et al. (2017) used GPS telemetry data from 173 male grizzly bears in the NCDE and the GYE and a new analysis method (randomized shortest path algorithm and step selection function models) to identify possible routes for male-mediated gene flow. These models depicted numerous potential paths from the NCDE to the GYE. 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 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 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.

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.

Other Forest management actions that are part of the baseline

In addition to the main programs and activities discussed above, other federally authorized activities occur on the Forest that could potentially affect grizzly bears. Activities such as road and trail maintenance, noxious weed control, maintenance and use of communication towers and other utilities, aquatic management, and gathering of firewood and other miscellaneous forest products may occur on an annual or infrequent interval. These types of activities are typically of low intensity and short duration. They may cause local disturbance to individual grizzly bears that are in the immediate vicinity.

These various past and present activities are ongoing and are part of the current baseline habitat conditions experienced by grizzly bears.

Existing Projects and Consultations

Several projects are ongoing on the Forest that influence existing baseline or have temporary impacts to secure habitat within some GBAUs. Consultation with the Service has been completed for these actions; thus, the actions are included in the environmental baseline as some of the impacts associated with the existing consultations are likely to continue. The projects that have temporary effects to secure habitat are addressed in Table 4 below. All ongoing projects with consultations are summarized Table 5 below.

Table 4. Ongoing projects with effects to secure habitat Units (U.S. Forest Service 2024).

Project	District	Year Consultation Completed	Influence on existing baseline and temporary impacts to secure habitat within GBAUs
Pintler Face	Wisdom	2021, 2024	Implementation in progress. Road closures resulted in a baseline increase of secure habitat. Temporary impacts to 311 acres in Pintler GBAU from temporary roads.
Basin Creek-Butte Watershed	Butte	2023	Implementation in progress. No changes to existing baseline; no re-routes, closures, or opening of closed roads. Temporary impacts to 2.3 acres in the Highland GBAU from temporary roads.
Greenhorns	Madison	2022, amended 2023	Implementation not started but will begin in 2024. No changes to existing baseline; no re-routes, closures, or opening of closed roads. Temporary impacts to 132 acres in Greenhorn GBAU from temporary roads.
Selway-Saginaw	Dillon	2023	Implementation not started but will begin in 2024. Changes to baseline; new and existing road segments identified as decommissioned, closed, or obliterated resulted in a net increase of 494 acres in Selway GBAU and a net decrease of 10 acres in the Upper Big Hole GBAU. Temporary impacts to 803 acres in Selway GBAU and 81 acres in Upper Big Hole GBAU from temporary roads.

Table 5. Ongoing projects with completed consultation (U.S. Forest Service 2024).

Project Name	Ranger District	Project Type	Implementation Status
Darkhorse Road Crossing	Wisdom	Aquatic restoration	Not yet implemented.
Celerity – Boulder Plan of Operations	Butte	Minerals	Not yet implemented; original BA stated secure habitat would be affected by temporary road building, but new on-the-ground information reveals temporary roads will be constructed in non-secure areas.
Elkhorn Mining Plan of Operations	Dillon	Minerals	Reclamation ongoing.
Yellowstone Adventure Series Race	Madison	Special Uses	Occurs annually; permit expires in 2027.
Headwaters Relay	Madison	Special Uses	Occurs annually; permit expires in 2027.
Echo Lake Ski Trail Warming Hut	Pintler	Special Use	Warming hut installed and open for public use between Dec 1- April 1; permit expires 2027.
Thompson Park Snowmobile Grooming	Butte	Trail Maintenance	Occurs annually under a volunteer agreement; winter activity only.
Aspen	Forest-wide	Vegetation Management	Specialist assessments required for implementation to ensure the programmatic sideboards are met.
Noxious Weed Control	Forest-wide	Vegetation Management	Ongoing annually, location varies.
Red Rocks	Butte	Vegetation Management	Vegetation treatments and prescribed fire ongoing.
Basin Creek Butte Watershed	Butte	Vegetation Management	Temporary secure habitat effects, see Table4.
Selway-Saginaw	Dillon	Vegetation Management	Temporary secure habitat effects, see Table 4.
Greenhorns	Madison	Vegetation Management	Temporary secure habitat effects, see Table 4.
Flint Foothills Vegetation Management	Pintler	Vegetation Management	Vegetation treatments completed; prescribed fire remaining.
Rancho Deluxe	Pintler	Vegetation Management	Vegetation treatments completed; prescribed fire remaining.
Spaeth's Corner	Pintler	Pintler	Temporary roads completed (not in secure habitat), only vegetation treatments remaining.
Fleecer Vegetation Management	Wisdom	Vegetation Management	Vegetation treatments ongoing; prescribed fire remaining.
Trail Creek Grasslands Conifer Removal	Wisdom	Vegetation Management	Vegetation treatments completed; prescribed fire remaining.
Pintler Face	Wisdom	Vegetation Management	Temporary secure habitat effects, see Table4.

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 affecting habitat use, home-range selection and the ability to move across the landscape. The same study concluded that effects of motorized access on individual bears also results in effects at the population level due to habitat fragmentation, and decreased survival and reproductive rates.

Displacement and security. 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 and adjacent to linkage areas between population units. McLellan (2015) found that the location of motorized routes relative to bear food sources was important and recommended that managers attempt to maintain or enhance high-energy foods while reducing human access into specific areas where and when those foods are abundant (seasonal habitat). When roads are located in important habitats such as riparian zones, snowchutes, and shrub fields, habitat loss through avoidance behavior can be significant. Mace et al. (1996) found that most of the roads within grizzly bear seasonal ranges were either closed to vehicles or used infrequently by humans. Some grizzly bears avoided areas with a high total road density even when the roads were closed to public travel. If human-related disturbances such as high levels of road use continue in preferred habitats for extended periods of time, grizzly bear use of the area may be significantly limited, particularly use by female grizzly bears and/or their

dependent offspring. In the Swan Mountain study (Mace et al. 1996), female grizzly bear home range selection of unroaded cover types was greatest and as road densities increased, selection declined. Zager (1980) reported the underuse of areas near roads by females with cubs. Aune and Kasworm (1989) found that female cubs generally established their home range within or overlapping with their mother's home range, whereas males generally dispersed from their mother's home range. Long-term displacement from a portion of her home range may result in long-term under-use of that area by female grizzly bears. Because cubs may have limited potential to learn to use the area, learned avoidance behavior could persist for more than one generation of grizzly bears before grizzly bears again utilize habitat associated with closed roads. Thus, displacement from preferred habitats may significantly modify normal female grizzly bear behavioral patterns.

Conversely, grizzly bears can become habituated to human activity and show a high level of tolerance especially if the location and nature of human use are predictable and do not result in overtly negative impacts for grizzly bears (Mattson 1993). In Glacier National Park, Jope (1985) suggested grizzly bears in parks habituate to high human use and showed less displacement, even in open habitats. Yonge (2001) found that grizzly bears near Cooke City, Montana, were willing to consistently forage in very close proximity to high levels of human use if cover was sufficient and energetically efficient feeding opportunities were present. Both Mattson (1993) and Yonge (2001) postulated that areas with higher levels of human activity might have a positive effect for bears by serving as a kind of refugia for weaker population cohorts (subadults and females with cubs) seeking to avoid intra-specific competition (adult males). However, Mattson qualified this observation by adding that the beneficial effects vary as to whether hunting is allowed, and how closely the human population is regulated. Further, food conditioned grizzly bears were much more likely to be killed by humans.

Both Yonge (2001) and Mattson (1993) indicated that increases in human use levels can be deleterious if some human activities are unregulated, such as use of firearms, presence of attractants, nature and duration of human uses. Conversely, a level of coexistence between humans and grizzly bears can be achieved if such activities are controlled. Near Cooke City, Montana, the New World Mine reclamation project had minimal effects on grizzly bears, in part because reclamation activities were temporally and spatially predictable and people associated with the work were carefully regulated against carrying firearms or having attractants available to grizzly bears (Tyers, unpublished 2006). In the Swan Valley of Montana, raw location data from a small number of collared grizzly bears show nocturnal use of highly roaded habitat (C. Servheen, U.S. Fish and Wildlife Service, pers. comm. 2005). The Swan Valley data have not been statistically analyzed and the study was not designed to determine the impact of roads on bears, sample size is very small, and perhaps most importantly, mortality rates for these grizzly bears are not yet known. However, these data indicate that some grizzly bears can apparently habituate to relatively high levels of human activity.

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

crossed during both day and night hours. In fact, at night, bears selected to cross low traffic volume roads at greater frequency than random.

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

Male grizzly bears typically have larger home ranges than females, and males, subadults, and transient grizzly bears are more mobile and do not have the same energetic needs as adult females. Transient individuals are highly mobile and not restricted to finding food and shelter within a home range. Thus, while displacement from habitat along roads may affect behavioral patterns such as feeding or sheltering of all grizzly bears, we do not anticipate such effects would cause harm or significant impairment to these behavioral patterns of transient, subadult, or male grizzly bears. Where road densities are high enough to result in significant displacement effects, non-lethal impairment to behavioral patterns of adult female grizzly bears and/or their dependent offspring may occur. However, some adult females have proven that they are able to successfully reproduce and raise young in BMUs, subunits, or areas outside of the recovery zone that exceed research benchmarks for adverse effects to grizzly bears (Kasworm et al. 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). Analysis in the South Fork Study area (Mace and Manley 1993, Mace et al. 1996) indicated the importance of unroaded habitat, especially for females with cubs. Mace and Manley (1993) reported adult females used habitat further than 0.5 mile from roads or trails more than expected; 21 percent of the composite home range had no trails or roads and 46 percent was unroaded (greater than 0.5 mile from a road). Substantive blocks of unroaded habitat were components of all adult female home ranges. Of the adult female locations within unroaded polygons, 83 percent occurred within 7 polygons that exceeded 2,260 acres in size (*Ibid*.). Based on grizzly bear habitat use data from the Yellowstone ecosystem, secure habitat and road densities outside of secure habitat were important predictors of grizzly bear survival (Schwartz et al. 2010).

The IGBC Taskforce (IGBC 1994, 1998) recognized the importance of secure areas to grizzly bears. The Taskforce defined "core areas" within the recovery zones as those areas with no motorized use of roads and trails (during the non-denning period) or high intensity, non-motorized use, providing some level of secure habitat for grizzly bears. Motorized use, such as snowmobiling or that associated with timber harvest, could occur within core areas during the denning (winter) period. The Taskforce recommended the establishment of core areas in all subunits within the recovery zones. Core areas within recovery zones should be a minimum of

0.31 mile (about 500 meters) from any open road or motorized trail, with the size and connectivity of core area patches being established by recovery zone, depending on ecosystem-specific habitat conditions. Once established and effective, core areas should remain intact on the landscape for at least 10 years (*Ibid*.). In the South Fork Study area of the NCDE, approximately 68 percent of the adult female composite home range was core area (U.S. Forest Service in litt. 1994, K. Ake, U.S. Forest Service, pers. comm. 2005).

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

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

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

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

The presence of Forest roads alone 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 types 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.

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 of grizzly bears being impacted by snowmobiles. At the time of emergence, snow conditions are changing rapidly. The same conditions that help lead to bear emergence (e.g., water infiltrating the den) (Schoen et al. 1987; Craighead and Craighead 1972) lead to poor quality snow for snowmobiling. At that time, snow is melting at lower elevations, making access to higher elevations more difficult for snowmobilers. In general, female grizzly bears with cubs emerge later in the season, when these snow and melt conditions are even more prevalent. Individual circumstances of access and allowable seasons are important variables to analyzing effects of snowmobiles to grizzly bears.

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

As described above, the action area occurs within both the GYE and the NCDE in areas where grizzly bears may be present. Within the GYE recovery zone, portions of the Madison Ranger District overlap with a small portion of the recovery zone (a portion of Hilgard #1 subunit) and a portion of the DMA (portion of the Gravelly Landscape). The remainder of the Forest in the GYE is outside of these designations. Within the NCDE, the Forest intersects with NCDE Zone

2. The area of the Forest overlapping NCDE Zone 2 includes portions of the Butte and Pintler Ranger Districts. The remainder of the Forest is located outside of the GYE and NCDE.

The conditions of the entire Hilgard #1 subunit associated with motorized access are included in the biological assessment (U.S. Forest Service 2024). The Forest's portion of the Hilgard #1 subunit in the GYE recovery zone has no motorized routes. Therefore, OMARD and TMARD are zero. Some roads outside of and immediately adjacent to the subunit influence secure habitat on the Forest's portion of the subunit, however, 90 percent of the Forest within the subunit is secure habitat. Current motorized access management on the Forest within the Hilgard #1 subunit is not likely to result in adverse effects to grizzly bears. The Forest does not anticipate changes to OMARD, TMARD, or secure habitat within the Forest's portion of Hilgard #1 unless better on-the-ground data is obtained. Since this unit is within designated Wilderness, no additional motorized access roads or routes are anticipated for construction and no additional effects over the existing conditions are expected.

Recovery zones were established to identify areas necessary for the recovery of a species and are defined as the area in each grizzly bear ecosystem within which the population and habitat criteria for recovery are measured. Recovery zones are areas adequate for managing and promoting the recovery and survival of grizzly bear populations (U.S. Fish and Wildlife Service 1993). Areas within the recovery zones are managed to provide and conserve grizzly bear habitat. Some areas outside the recovery zones have some level of management as described above (i.e. NCDE zones 1 and 2) but most areas outside the recovery zones are not managed for grizzly bears and do not have a need to track the same motorized access metrics as within the recovery zone. As such, the moving windows process is not used outside of the recovery zones and the information and knowledge associated with motorized access is not consistent with the information presented for the recovery zones. In order to analyze the effects of motorized access outside of the recovery zones, as described in the baseline section above, we have incorporated secure habitat into this analysis. Secure habitat has been identified as one of the key issues related to effects of motorized access on grizzly bears and is important to the survival and reproductive success of grizzly bears. As secure habitat is directly tied to and based on open and restricted motorized routes and provides a more accurate indication of the spatial mix of motorized routes and secure habitat, it more adequately represents the potential effects to grizzly bears related to motorized access than a simple linear route density. Secure habitat metrics are based on motorized route information. Open motorized road and trail density and route lengths within grizzly bear analysis units are provided in table 21 of the biological assessment (U.S. Forest Service 2024).

With the exception of the Hilgard #1 subunit, the remaining portions of the Forest, which occur outside of recovery zones, have been delineated into GBAUs. Table 1 above displays the modeled existing secure habitat for the GBAUs within the action area. 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. As the access database is updated, the improved information will better reflect the existing conditions related to motorized access. If the Forest finds that it has new information or has made a 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.

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 the Forest ranges from a low of 16 percent of Forest land in the Dry Cottonwood GBAU to a high of 83 percent of Forest land in the Lee Metcalf South GBAU. Of all 43 GBAUs delineated on the Forest, two have less than 20 percent secure habitat on Forest land, seven have between 20 and 29 percent secure habitat on Forest land, ten have between 30 and 39 percent secure habitat on Forest land, eight have between 40 and 49 percent secure habitat on Forest land, seven have between 50 and 59 percent secure habitat on Forest land, and nine 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.

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

While not specifically proposed under the Forest Plan, permanent route construction and use in the area outside of the recovery zones may occur, typically associated with a site-specific project. Permanent routes may be used during the short-term for a project and then restricted with a barrier with the potential for future administrative use or may be used for the long-term and receive a substantive amount of use if kept in an open status. Per the proposed action, the Forest expects that some future projects will have at least a small permanent increase in roads, which may affect a small amount of secure habitat depending on site-specific decisions and information. As nothing is specifically proposed, for the purposes of this consultation, the information provided by the Forest was used and the effects of a very small permanent decrease of 1 percent of the secure habitat within any given GBAU outside of the recovery zones associated with the construction and use of permanent motorized routes will be analyzed. For future site-specific projects with permanent route construction that may affect more than 1 percent of a given GBAU, which is allowed but difficult to analyze programmatically, the effects of such will be analyzed during the site-specific project consultation as they would not fall under the level of effects analyzed here. While we analyze the effects of a permanent 1 percent decrease in secure habitat within any given GBAU, the Forest has described it is extremely unlikely that the Forest will permanently reduce secure habitat by the full one percent as the Forest has not constructed any new, permanent roads since 2009 (with the exception of some

special use driveways to provide inholding access, although these are not within secure habitat due to buffers around inholdings).

Vegetation or other management actions often require the construction and use of temporary routes or temporary use of restricted routes for motorized access, which may affect secure habitat. While not specifically proposed under the Forest Plan, temporary route construction and use, and temporary use of restricted routes may occur on a project-by-project basis. Temporary routes built for resource extraction such as timber harvest or mining may be short-term in duration of use or may remain on the landscape for several years and receive a substantive amount of use. Over the longer term, after project completion, the amount of secure habitat affected by these projects will return to pre-project levels. For the purposes of this consultation, the Forest estimated that the construction and use of temporary project routes or temporary use of restricted routes would temporarily decrease the effectiveness of secure habitat by no more than 5 percent in any given GBAU at any given time. Projects may span more than one GBAU and for those projects, a project would not affect secure habitat by more than 5 percent in each of the GBAUs.

The Forest would not affect all secure habitat concurrently because implementation schedules for specific projects would vary. As such, on-the-ground temporary effects would fluctuate in both location and duration. Further, the effects to secure habitat would be distributed across GBAUs (compared to localized in one large area) which would leave adjacent, undisturbed habitat for grizzly bears to use.

Depending on the site-specific project information (size, location, duration, etc.), effects associated with permanent and/or temporary route construction and use, or temporary use of restricted routes could range from minor disturbance and insignificant effects to displacement of grizzly bears that may result in adverse effects to individual female grizzly bears. The effects of displacement and under-use of habitat related to motorized access (including the existing motorized access conditions, the potential permanent and/or temporary route construction and use, and temporary use of restricted routes) are tempered by local resource availability, resource condition, seasonal use, and the number of grizzly bears using an area. Currently, the number of grizzly bears using the Forest varies. Depending on site-specific information on the presence of grizzly bears and location of secure habitat within the GBAUs, adverse effects from existing low amounts of secure habitat in some portions of the action area, permanent decreases in secure habitat, or temporary effects to secure habitat may result in the displacement of individual grizzly bears, the avoidance of suitable habitat, and/or the reduction of habitat to an unsuitable condition; potentially significantly affecting individual female grizzly bears and/or their dependent offspring. Under-use of habitat in proximity to roads by grizzly bears does not necessarily preclude use or form a barrier to dispersal and movement across the landscape.

At this time, within some portions of the GBAUs in the action area (the Forest), grizzly bears have not been verified. 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, permanent route construction and use, temporary route construction and use, and temporary use of restricted routes, the Service anticipates that some level of adverse effects to female grizzly bears and/or their dependent offspring with home ranges impacted by such routes may occur in some situations during the life of the Forest Plan. Some adult females may be displaced from key habitats and under certain conditions they may be displaced to levels that impair their normal ability to readily find food resources needed to sustain fitness necessary for breeding and producing cubs and finding shelter. We do not expect that all existing routes, new permanent and/or temporary routes and use, or temporary use of restricted routes would have adverse impacts on female grizzly bears and/or their dependent offspring, or that all female grizzly bears and/or their dependent offspring would be adversely affected by these conditions. Some adult females have proven that they are able to successfully reproduce and raise young in BMUs or subunits that 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 road, length of the road, timing of use, the frequency and intensity of use, and the duration the road would be on the landscape, in relation to those factors listed above for effects of roads. Not all temporary routes would likely to be constructed at once. Some of the routes would be consolidated in project areas and be

constructed and used at the same time, which would concentrate effects on grizzly bears into a smaller area. Other roads would be separated by space and time across the Forest, which may affect more individual grizzly bears, but have less intense effects. However, if under-use of key feeding and sheltering habitat by female grizzly bears is significant, they may fail to obtain the necessary resources to breed, successfully reproduce, and/or successfully raise dependent offspring.

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

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

Effects of Winter Motorized Use in the action area

In general, winter motorized use is well-distributed across the Forest, although the greatest intersection between denning habitat and motorized use occurs on the Dillon Ranger District, specifically the Pettengill and Bryant Creek adjacent GBAUs and the Selway and Upper Horse Prairie adjacent GBAUs (Table 12; Figure 7 in the biological assessment (U.S. Forest Service 2024)). Information on winter motorized over-snow travel on the Forest is displayed in the baseline section above and will not change as a result of this consultation on continued

implementation of the Forest Plan. Thus, the amount and timing of winter motorized use would remain the same under the Forest Plan as the existing, baseline condition.

As mentioned above, approximately March 1 is when grizzly bears begin to emerge from their dens in the GYE. In the NCDE, female grizzly bears begin to emerge from their dens around April 15. However, since the Forest is within portions of both ecosystems, our analysis will use March 1 as a conservative approach across the Forest. As stated in the baseline section above, winter over-the-snow motorized use may occur in areas throughout the Forest through May 15. A variety of winter motorized activities can occur within winter recreation allocations, including snowmobiles, ATV and motorcycle riding, four-wheeling, and scenic driving, among others, although these activities may be limited to specific areas (e.g., outside of designated and recommended wilderness) and restricted by season of use. In addition to recreation over-snow use, motorized over-snow travel is permitted as part of lands and recreation special uses for infrastructure and administrative maintenance (U.S. Forest Service 2024).

The primary concerns with winter over-snow vehicle use (snowmobile) with respect to grizzly bears are the potential effects associated with denning, den emergence, and spring habitat. Summer and fall habitats are not at issue since over-snow vehicle use would not overlap with these seasons. Winter recreation primarily occurs during the grizzly bear denning season. As winter motorized travel can occur through May 15, beyond the March 1 active bear year, some level of late season winter motorized use may occur during the time grizzly bears are emerging from dens. This late season winter motorized travel overlaps with approximately 280,159 acres (8 percent) of modeled grizzly bear denning habitat (U.S. Forest Service 2024). Table 2 above displays the amount of overlap by GBAU.

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 any areas where winter motorized use does not occur beyond March 1, effects would be insignificant. The effects of winter motorized use beyond March 1 in those areas that overlap denning habitat are discussed below in the denning habitat, den emergence, and spring habitat sections.

Denning Habitat

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

Den Emergence

To review, grizzly bears begin emerging from their dens as early as March 1 (U.S. Forest Service 2024). 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, there will be very little potential for conflict with winter motorized travel.

Snow conditions within portions of the action area are often suitable for over-snow vehicle use well beyond March 1. This is true especially in the higher elevations of the Forest. As winter motorized travel may occur through May 15, the potential exists for interactions between winter motorized use and grizzly bears that have recently emerged from their dens.

As previously mentioned, approximately 280,159 acres (8 percent) of modeled grizzly bear denning habitat are open to winter motorized travel during the den emergence period. 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, 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. 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.

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. 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 over-snow vehicle 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.

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 travel would be permitted after March 1 in some areas, spring over-snow vehicle use areas and spring grizzly bear habitat are almost mutually exclusive in that the areas that would be suitable for spring over-snow vehicle use (i.e. more snowpack) would not typically overlap with spring grizzly bear habitats (i.e. less snowpack). Therefore, the Service does not expect impacts to spring habitat and foraging grizzly bears related to over-snow motorized use to be significant.

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: wildland and prescribed fire ignition or suppression actions, invasive weeds treatment, species reconnaissance (e.g., population counts by the state and USGS IGBST), 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 a 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 utilize 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 aircraft. 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 both 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). Reference the biological assessment for further information (U.S. Forest Service 2024). With the exception of recurring long-term aircraft use, grizzly bears would likely return soon after the disturbance has stopped.

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 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 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

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 temporarily 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 includes cross country skiing, ski touring, winter hiking, dog sledding, fat-tire biking, trapping, hunting, and fishing, among others. In general, non-motorized

activities are permissible in all winter recreation allocations on the Forest. 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. Winter non-motorized activities can occur within 6 percent (202,857 acres) of grizzly bear denning habitat on the Forest. 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, rental cabins, summer homes, trailheads, lodges, ski areas, fire lookouts, visitor centers, and others. In addition to disturbance effects described above, developed sites on public lands are associated with frequent and/or prolonged human use that may include continuous or frequent presence of food and attractants. Approximately 236 developed recreation sites occur on the Forest. Appendix E of the biological assessment contains a list of developed recreation sites by type and the activities associated with their use, maintenance, and operation. Table 14 in the biological assessment displays the number of developed recreation sites by GBAU.

Dispersed recreational opportunities, as well as non-motorized (e.g. hiking, horseback, mountain biking) recreation, also occur throughout the Forest and are largely composed of dispersed camping along trails and roads. Dispersed recreation 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. On Forest lands, requirements for proper storage of food, garbage, or other attractants are established and enforced through issuance of special orders. The Forest-wide Food Storage Order is an important conservation action that has reduced the potential for human-bear conflicts and mortality risk. Although the Food Storage Order expires 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.

In addition to the Food Storage Order, the Forest is making a concerted effort to provide food storage signage and bear-proof storage infrastructure (e.g., meat poles, food lockers) in areas with frequent public use or within areas heavily used by grizzly bears. This effort is ongoing and the Forest continues to pursue funding and partners to support this effort. The Forest also provides bear-resistant food coolers (per IGBC recommendations) for public use through a check-out system at district offices. Additional items (such as electric fencing, hanging systems, etc.) are available or may become available in the future at district offices to promote safe backcountry food attractant options. Whether a location has a bear resistant food container or trash container or not, visitors are responsible for ensuring attractants are stored properly according to the Forest-wide Food Storage Order.

Since 2009 (15-year period), only 1 conflict has occurred on the Forest associated with food attractants (2021). No grizzly bears have been lethally removed from the Forest associated with food and/or attractants. The Forest will continue to provide education and infrastructure to prevent future conflicts. As grizzly bears continue to expand their range, the potential for conflict in developed recreation sites still exists (despite existing infrastructure and a current food storage order). However, given the very small number of conflicts over the last 15 years, the lack of associated grizzly bear mortality, and given the Forest-wide Food Storage Order that is in place, the effects of continued implementation of the Forest Plan with regard to developed and dispersed recreation on the Forest may cause disturbance of individual bears but is unlikely to rise to the level of adverse effects by causing habitat displacement or food-conditioning of grizzly bears.

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

Livestock Grazing

General Effects of Livestock Grazing

Effects of livestock grazing on grizzly bears are generally related to depredations of livestock by grizzly bears, disposal of livestock carcasses, storage of human food and stock feed, and grizzly bear habituation, food conditioning, and mortality risk associated with these activities. Depredating bears may become food conditioned resulting in management actions that remove bears from the population.

Being an opportunistic feeder, any individual grizzly bear can learn to exploit livestock as an available food source just as easily as they habituate to other human food sources (Johnson and Griffel 1982). Livestock depredations tend to occur independent of natural grizzly bear food availability (Gunther et al. 2004, Gunther et al. 2012). Grizzly bears have demonstrated the ability to learn livestock 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. Grizzly bears that kill livestock include a range of ages and both sexes (Johnson and Griffel 1982).

The adverse effects of domestic sheep grazing on grizzly bears are well documented (Knight and Judd 1983, Johnson and Griffel 1982). Sheep grazing in occupied grizzly bear habitat poses substantive risks to grizzly bears since in many areas grizzly bears kill sheep much more readily than other livestock (although this is not the case on the Forest). 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. It is important to note that these results are not typical of the livestock conflicts on the Forest as cattle predation is the most common occurrence. Since 2009, more than 97 percent of the livestock conflicts on the Forest have been associated with cattle.

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 is generally 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. Complete carcass removal can be done if in an area of high human concentration and if located within 24 hours of the animal dying. For example, this has been done successfully throughout the Madison Ranger District on the Forest over many years. In addition, Anderson et al. (2002) noted, "While carcass removal may reduce the concentration of bears in an area, it may not prevent bears from developing depredatory tendencies or repel depredating bears from grazing areas."

Effects of Livestock Grazing in the Action Area

The Forest currently manages approximately 213 active livestock allotments, with 178 cattle only allotments, 2 horse only allotments, 24 cattle/horse allotments, 7 horse/sheep allotments, 1 cattle/sheep/horse allotment, and 1 bison allotment. Three allotments on the Forest are vacant. Table 3 above displays these allotments and the total acreages. The types of effects to grizzly bears from livestock operations potentially include competition for preferred forage, displacement of bears due to livestock-related activity, and direct mortality due to control actions related to grizzly bear-human conflicts as a consequence of livestock depredation or learned use of bear attractants such as livestock carcasses and feed.

The Forest Plan would maintain the existing number and distribution of allotments on the Forest and would potentially reduce the number of sheep allotments. The Forest Plan Wildlife Standard #5 states that "sheep allotments within the Gravelly Landscape which become vacant will be closed to sheep grazing or the allotment may be used by an existing Gravelly Landscape sheep permittee with no increase in permitted use." Therefore, the number of allotments and likely, the number of sheep, will not increase and may decrease under the Forest Plan. However, the potential for conflicts to occur will remain, and may continue to increase on the Forest as grizzly bear numbers continue to increase and distribution continues to expand.

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).

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. As grizzly bears continue to increase in density and distribution in Montana, relocation of grizzly bears is less common than removal. Grizzly bear mortalities also result from defense of life situations when riders and/or herders encounter grizzly bears during their management duties (fence maintenance, riding, checking livestock, etc.). While it is the modification of natural feeding behavior that is the adverse effect, we use the number of conflicts, management removals, and self-defense mortalities as a metric to measure the effects.

Depending on geographic area, all age classes of cattle and sheep are depredated upon by grizzly bears and depredation rates fluctuate annually. With greater geographic distribution and increased grizzly bear densities, livestock depredations are increasing on public and private land in Montana, especially within the Gravelly landscape portion of the Forest. The southern end of the Gravelly Landscape continues to be the main area with clusters of livestock depredations by grizzly bears. Depredations are beginning to be documented further north each year down the

Ruby Valley and close to the Greenhorn Mountains in the Gravelly Landscape. It is assumed that as grizzly bear densities continue to increase and grizzly bear distribution continues to spread, conflicts will also increase and be documented in new areas.

Since 2009, 177 livestock conflicts (172 with cattle, 5 with sheep) have occurred on the Forest. Currently, the southern end of the Gravelly Landscape on the Madison Ranger District has the most livestock depredations by grizzly bears on the Forest, which is the area of the Forest where the majority of grizzly bears occur. Between 2009 and 2020, management removal of 4 grizzly bears and mortality of 5 grizzly bears related to self-defense by livestock riders and/or herders occurred on the Forest (all on the Madison Ranger District in the GYE). Since 2020, 4 additional grizzly bear mortalities have occurred associated with livestock grazing: 2 management removals in 2021, no mortality in 2022, and 2 management removals in 2023. While most of the livestock conflicts have occurred on the Madison Ranger District, 2 conflicts have also occurred on the Butte Ranger District in 2021 and 3 conflicts have occurred on the Wisdom Ranger District (1 in 2018 and 2 in 2022). No grizzly bears were removed as part of the livestock conflicts on the Butte or Wisdom Ranger Districts. Grizzly bear-livestock conflicts are likely to continue as long as livestock are on the landscape in those same areas where grizzly bears may be present. While some information for 2024 is acknowledged in the baseline section above, the data on grizzly bear-livestock conflicts and/or depredations and any associated grizzly bear management removals is not complete for 2024 and any information for 2024 is not incorporated into this effects analysis.

Permitted livestock grazing on the Forest is contingent on the continued implementation of numerous conservation measures that provide for protection and conservation of the grizzly bear. These conservation measures are designed to minimize grizzly bear-livestock and grizzly bear-human conflicts, reducing the overall incidence of adverse effects on grizzly bear. For example, conservation measures required in permits addressing livestock carcass management and food storage can reduce the likelihood of a grizzly bear-human conflict. Conservation measures from previous consultations that are still appropriate and effective were brought forward into this consultation along with the inclusion of additional measures that have been ongoing in the GYE but not previously stated. These measures are described in the biological assessment, which is incorporated by reference (U.S. Forest Service 2024).

Information and education requirements with permittees will also contribute to reducing circumstances that could cause a grizzly bear-human conflict with increased training on how to work in bear country. Annual meetings with permittees and cooperating agencies (Montana Fish, Wildlife and Parks (MFWP) and Wildlife Services (WS)) also increase understanding of bear use and activity throughout the Forest, which contributes towards grizzly bear conservation. In addition, the Forest will follow the nuisance bear standard for nuisance bear management that embedded within the 2009 Revised Forest Plan.

While the conservation measures and information and education requirements are expected to reduce and minimize the level of grizzly bear-livestock conflicts and depredations of livestock as well as grizzly bear-human conflicts, not all situations will be avoided. For example, while the number of carcasses will be reduced, we recognize that complete carcass removal is not possible. Thus, some level of grizzly bear management removal related to livestock conflicts and depredations or mortality related to self-defense is inevitable. As the number of grizzly bears continues to increase on the Forest, an increase in the number of grizzly bears subject to potential

management removal or mortality as a result of grizzly bear-livestock and grizzly bear-human conflicts may occur. Consequently, livestock management on the Forest will continue to have the potential to result in adverse impacts to grizzly bears.

As described above, given the increasing number of grizzly bear-livestock conflicts and management actions on the Forest since 2009 (Table 9 in the biological assessment), we expect the number of conflicts, removals, and grizzly bear mortalities associated with livestock grazing to continue to increase over the life of the Forest Plan. It is difficult, however, to accurately predict the exact number of conflicts, grizzly bear management removals, and grizzly bear mortalities, though we expect the number will increase through time as the density of grizzly bears increases. The following approach recognizes both the uncertainty and the expectation for increasing conflicts associated with livestock grazing on the Forest. We are not intending to limit the activities necessary to manage grizzly bears by implementing this approach, but instead are intending to provide a reasonable estimate of what we expect could happen over the next 12 years (life of the consultation).

The number of grizzly bear-livestock conflicts have increased from 0 in 2009 to a high of 43 in 2021, with numbers varying in between for the remaining years. Since 2009, as a result of grizzly bear-livestock conflicts, management removal of grizzly bears has occurred 8 times and mortality of grizzly bears related to self-defense (riders/herders) has occurred 5 times. The increase in conflicts over time is not due to an increase in livestock numbers or allotments but mainly due to a growing and expanding grizzly bear population. We expect the population will continue to grow and expand. While we display the conflict data back through 2009, very few conflicts occurred and no management removals occurred until 2015. Only 1 grizzly bear management removal occurred in 2015 and no grizzly bear mortalities occurred in 2016. Further, no mortality associated with grazing-related to self-defense occurred prior to 2013 and none occurred again until 2017. Thus, we have used conflict, removal, and self-defense mortality data from the 7-year period between 2017 (the year conflicts began to increase considerably) through 2023 (most current complete data) to forecast anticipated management removals and grizzly bear mortalities associated with livestock grazing on the Forest into the future (12 years) as that is most representative of the increasing geographic distribution of grizzly bears as well as the increasing number of grizzly bears.

On average, approximately 24 conflicts occurred per year over the 7-year period from 2017 through 2023 (noting that the total number of conflicts was 167 and varied from 14 to 43 in any given year). As a result of these conflicts, 7 grizzly bear management removals occurred during this same time-frame along with 4 grizzly bear mortalities related to self-defense from riders and herders for a total of 11 grizzly bear mortalities from 2017 through 2023. As grizzly bear numbers and distribution increases, these numbers may increase somewhat as well. In addition to the grizzly bear management removals that occurred, several attempts were made to trap and capture grizzly bears associated with livestock conflicts that were unsuccessful. The number of unsuccessful management capture attempts varies from 1 to 5 in any given year, with an average of 2.5 attempts per year between 2017 and 2020. No unsuccessful management capture attempts occurred during the period 2021 through 2024. Had these capture attempts been successful, it is unknown as to whether relocation or management removal of the offending grizzly bear would have occurred. However, it is reasonable to assume that had some of these attempts been successful, the number of grizzly bear management removals could be higher in some years.

We do not know exactly how many conflicts or management removals will occur in any given year in the future. Based on the 11 known grizzly bear mortalities over the 7-year period from 2017 through 2023, we would expect, on average, close to about 2 grizzly bear mortalities associated with livestock grazing in any given year. However, we also expect the rate of grizzly bear mortalities will continue to increase as the grizzly bear population and distribution increases on the Forest and we need to account for the potential management capture attempts that were unsuccessful. As grizzly bears continue to increase in density and distribution in Montana, relocation of grizzly bears is less common than removal. To account for the potential higher number of management removals (based on unsuccessful management capture attempts) and the likelihood of an increase in conflicts as grizzly bear numbers and distribution increases, we will include 1 additional grizzly bear per year to the expected amount of management removals in the future (based on the minimum number of unsuccessful management capture attempts in any given year between 2017 and 2023).

Management removal of grizzly bears or self-defense grizzly bear mortalities may not occur every year and in some years multiple management removals and/or self-defense grizzly bear mortalities may occur. For example, no grizzly bear management removals or self-defense grizzly bear mortalities occurred in 2016 or 2022 and only 1 grizzly bear management removal or self-defense mortality occurred in 2015 and 2019. However, 1 grizzly bear management removal and 1 self-defense grizzly bear mortality occurred in both 2017 and 2018 (2 total grizzly bear mortalities each year), 2 self-defense grizzly bear mortalities occurred in 2020, and 2 management removals occurred in both 2021 and 2023.

Because we expect the number of grizzly bear mortalities to be higher in some years and lower in others, it does not make sense to analyze the effects with specific annual numbers. Thus, to account for differences between years, we use a rolling window to analyze and measure the effects of livestock grazing on grizzly bears. We use the amount of grizzly bear management removals and self-defense mortalities that occurred between 2017 and 2023 to anticipate the amount of grizzly bear mortality likely to occur in the future. As described above, we will also add 1 grizzly bear mortality to each year to account for the potential higher number of management removals (estimated from unsuccessful management capture attempts) and the likelihood of an increase in conflicts as grizzly bear numbers and distribution increases. For the 7-year period of 2017 through 2023, 7 management removals of grizzly bears and 4 self-defense grizzly bear mortalities occurred for a total of 11 grizzly bear mortalities. Using these numbers and then adding 1 additional grizzly bear per year, we would expect no more than 18 grizzly bear mortalities associated with livestock grazing on the Forest over any given 7-year period. Tracking of grizzly bear mortalities would begin with the most-recent 7-year period from issuance of this biological opinion and would then be tracked on a sliding scale. For example, tracking for 2025 would reflect the most recent 7 years of mortality data associated with livestock grazing including the years 2019, 2020, 2021, 2022, 2023, 2024, and 2025; tracking for 2026 would include the years 2020, 2021, 2022, 2023, 2024, 2025, and 2026; tracking for 2027 would include the years 2021, 2022, 2023, 2024, 2025, 2026, and 2027; and so on through 2036.

Based on the grizzly bear status in the GYE and NCDE, past management removals and mortalities of a limited number of grizzly bears related to livestock grazing on the Forest have not had detrimental impacts on the GYE and NCDE populations. We expect that the additional management removals and mortalities of grizzly bears related to livestock grazing estimated above also will not have detrimental impacts on these populations.

Honeybees are classified as livestock in Montana (MCA 15–24–921) and can attract grizzly bears. While some apiaries occur on private land, none occur on the Forest. It is possible the Forest may permit honeybees via a special-use permit during the life of this document. Effects to grizzly bears would be disclosed in a project-specific analysis if an apiary is proposed for special uses.

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

The use of aircraft, including helicopters, may also be used in vegetation and fire management activities, and in general reduce impacts to grizzly bears where they reduce or eliminate the need for new roads. Helicopter or other aircraft use may elicit a response in grizzly bears. Effects may range from a simple awareness, short-term disturbance or flight response, or displacement from an area (Montana/Northern Idaho Level 1 Terrestrial Biologist Team 2009). In timbered habitats, McLellan and Shackleton (1989) found that an overt avoidance or displacement

response occurred with high intensity helicopter activity, such as carrying equipment within 200 meters of a grizzly bear. Helicopter use that is short in duration and low in frequency, would not likely result in significant affects to grizzly bears. Extended helicopter use with multiple passes could interfere with the normal behavior patterns of grizzly bears. However, when considering long-term habitat effects, helicopter use does not use or require roads and may not pose the same chronic displacement effects or mortality risks that roads-based operations do. Helicopter use is a temporary event, whereas roads can be features on the landscape long after a project is complete. Consequently, while short-term helicopter activities may impact grizzly bears, they do not impart the same chronic habitat effects as roads. If repeated, low altitude flights continue into multiple seasons, the effects upon grizzly bear behavior (i.e., avoidance and more than just temporary disturbance) may become more substantial.

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

Effects of Vegetation and Fire Management in the Action Area

The 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 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. Although no forest plan direction for timber and vegetation management is specific to grizzly bears, several standards, goals, and objectives may influence grizzly bear habitat on the Forest and are described in the biological assessment (U.S. Forest Service 2024), which is incorporated by reference.

The Forest divides vegetation management areas into three categories: those that are suitable for timber production (the management of tree stands for industrial or consumer use), areas unsuitable for production, but where harvest is allowed for another reason (managing fire risk, aspen restoration, salvage, etc.), and areas that are unsuitable for production and no harvest is allowed (fragile soils, wetlands, areas withdrawn by an act of Congress, etc.). In areas where harvest is permitted, a variety of methods may be utilized for tree removal, including: pre-commercial thinning (non-commercial; removal of individual or stands of trees before trees reach marketable maturity), regeneration harvest (commercial; clear cuts with reserves, shelterwood or seed tree cuts where there are little to no seedlings or saplings established in the understory), salvage harvest (commercial; intermediate harvest, where seedling, saplings, or residual stocking levels are sufficient for stocking purposes, generally at or above 200 trees per acre), and commercial thin harvest (commercial; intermediate harvest, leaving generally in the range of a density of 40-80 basal area, which equates to removing 30-70 percent of the pre-existing stand densities and is generally focused in Douglas-fir dominated vegetation types).

Timber management also includes conifer removal for research purposes (e.g., demonstration plots) or whitebark pine restoration. Vegetation management projects also include tree removal for aspen restoration, conifer encroachment, and special forest products. Harvest or public availability (via special forest products) of competing trees is considered a by-product of these activities.

The Forest commercially treats an average of 2,000 acres per year, with a general range between 1,500 to 2,500 acres. Of these, 40 to 80 percent (800 to 1,600 acres, based on the average) are considered suitable for timber production with 20 to 60 percent (400 to 1,200 acres, based on the average) classified as not suitable, but harvest is permitted for other objectives. Although changes may occur, the October 2023 five-year program of work indicates this trend will continue (Brennick pers. comm. 2023 *in* U.S. Forest Service 2024). Recent Forest Service Regional Office direction indicates timber harvest will remain stable with the potential for a slight increase (*Ibid*.). This direction could cause the Forest to increase commercial treatments to 3,000 acres per year, on average, with a general range of 2,500 to 3,500 acres per year (Brennick pers. comm. 2023 *in* U.S. Forest Service 2024). Due to likely increases in regional fuels targets, the Forest estimates increasing annual fuels treatments (i.e. tree thinning, prescribed fire, commercial timber harvest) to 8,000 to 10,000 acres. This equates to a range of 120,000 to 150,000 acres of vegetation treatments through 2036, with approximately 60 percent occurring within WUI areas (Reneau pers. comm. 2023 *in* U.S. Forest Service 2024).

Wildfire has a strong influence on the age distribution and spatial arrangement of Forest vegetation. While acres affected by wildfire will be highly variable, the size and severity of wildfires are expected to continue to increase due to climate change. 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 is not provided. Decisions on whether to manage a wildfire for resource benefit will include an analysis of the site-specific information such as location of a wildfire start, natural and human resources and values at risk, timing of fire occurrence, current and predicted weather, local and national resource availability, and other factors. Thus, it will be determined at the time of a wildfire event whether the appropriate action will be suppression or to manage the wildfire for resource benefit, or a combination of these options.

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

Grizzly bears are habitat generalists and would be able to shift their use to low disturbance areas within their home ranges during treatment activity. Thus, disturbance effects are expected to be minimal. Future proposed vegetation and fire management actions are expected to provide

sufficient habitat for grizzly bears, such as connectivity, cover, forage, and denning habitat, among others. We expect that forest, grassland, shrubland, and riparian habitats would be managed to provide early, mid, and late successional vegetation stages. Based on decades of previous consultation, the effects to important habitat features such as connectivity, cover, forage, and/or denning are expected to be minor and insignificant and potentially beneficial. While proposed activities would likely open up patches of forested habitat and travel may be altered somewhat, areas of untreated forest typically remain and treatments are not expected to create barriers to movement or preclude travel. Linkage and habitat connectivity are not likely to be significantly affected.

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

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

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

Energy and Mineral Development

Effects of Energy and Mineral development in the Action Area

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

No gas or oil exploration or development is occurring on the Forest at this time. The potential for oil and gas resources on the Forest is considered to be low or very low, with some areas having a moderate potential (U.S. Forest Service 2024).

Currently 88 of the 516 active mining claims on the Forest are within secure grizzly bear habitat (see Table 16 in biological assessment (*Ibid*.)). These generally do not have motorized access and are extremely localized in scale, generally consisting of single drill pots, adits, or placer mines. Due to the lack of motorized access to these areas, it is likely effects from these actions result in temporary disturbance from the area due to human presence. Secure habitat may be temporarily affected if access is permitted via off-road motorized means. Grizzly bears would likely return to these areas once the temporary activities cease. The remaining 428 active mines on the Forest are not within secure habitat. No large-scale mineral mines with ongoing activities are active at the time of this writing. It is possible grizzly bears may also avoid active mine areas because of proximity to roads accessible via motorized means. It is unlikely every active mine supports consistent and frequent access via a motorized vehicle, so effects from existing mines outside of secure habitat are most likely infrequent.

Minerals, Oil, and Gas Standard 1 allows controlled surface use and occupancy with restrictions for areas with occupied grizzly bear habitats. Per leasing terms, if threatened or endangered species or substantial environmental effects are encountered during construction, all work affecting the resource will stop and the land management agency will be contacted (U.S. Department of Agriculture 2009a *in* U.S. Forest Service 2024). Ensuring this standard is met is beneficial to grizzly bears. Although some individual grizzly bears may be adversely affected by minerals, oil, and gas activities and associated actions (motorized routes, effects to secure habitat, etc.), the restrictions in this standard may limit some of those effects by preventing disturbance during sensitive time periods. Under Minerals, Oil, and Gas Standards 2 and 3, roads and drill pads associated with minerals, oil, and gas activities will be obliterated (unless the road is needed as part of the Forest Service permanent transportation system; Standard 2). These standards minimize the potential for long-term effects to grizzly bears.

Activities associated with minerals, oil, and gas exploration and development, as well as remediation, superfund sites, or removing saleable minerals, 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 and are discussed above in the '*General Effects of Roads on Grizzly Bears*' and the '*Effects of Motorized Access in the Action Area*' sections above. In addition, food and garbage storage at activity sites and camps may attract grizzly bears and contribute to risks. Such effects are also discussed above (see the '*Effects of Food and Attractant Storage and Habituation*' section above). Finally, general effects associated with helicopters are discussed above in the '*General Effects of Vegetation and Fire Management*' section above. 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 helicopter use, the remaining effects associated with energy and/or mineral development are not likely to be adverse to grizzly bears and grizzly bear habitat conditions. Any 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, Proctor et al. 2005), 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. 2015, 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). The NCDE appears to be more than capable of serving as a source population for other grizzly bear populations, including the GYE, based on its large, increasing population size and its expanding distribution (NCDE Subcommittee 2020). 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. For example, the Forest Plan identifies habitat connectivity goals for grizzly bears, including the Connectivity Goal and Wildlife Secure Areas and Connectivity Goal. 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 Forest Plan. Continued implementation of the Forest Plan is likely to continue to maintain or improve habitat connectivity and demographic connectivity on the Forest between the NCDE, GYE, and/or BE.

Effects Summary

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

In reviewing the effects of the continued implementation of the Forest Plan on grizzly bears across the action area, the overwhelming majority of Forest management actions that may have the potential to adversely impact grizzly bears include motorized access and livestock grazing. Effects related to motorized access management 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 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 management, including potential helicopter use, which may be adverse at times depending on the site-specific information.

As anticipated in the Recovery Plan, grizzly bears are expanding their range outside of the recovery zones. Grizzly bears outside of recovery zones probably experience a higher level of

adverse impacts due to land management actions than grizzly bears inside the recovery zones. However, grizzly bears are able to live in habitat in the action area outside of the recovery zones. 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 over time involving grizzly bears and human use. Nevertheless, we conclude that the Forest Plan contains measures that minimize the potential for adverse impacts to grizzly bears from Forest management activities within the action area.

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

For the purposes of this consultation, the Forest estimated that the construction and use of temporary project routes or temporary use of restricted routes would temporarily decrease the effectiveness of secure habitat by no more than 5 percent in any given GBAU at any given time. Projects may span more than one GBAU and for those projects, a project would not affect secure habitat by more than 5 percent in each GBAUs, even if the GBAUs are adjacent. The Forest would not affect all secure habitat concurrently because implementation schedules for specific projects would vary. As such, on-the-ground temporary effects would fluctuate in both location and duration. Further, the effects to secure habitat would be distributed across GBAUs (compared to localized in one large area) which would leave adjacent, undisturbed habitat for grizzly bears to use.

The Forest also expects that some future projects will have at least a small permanent increase in roads, which may affect a small amount of secure habitat depending on site-specific decisions and information. As nothing is specifically proposed, for the purposes of this consultation, the information provided by the Forest was used and the effects of a very small permanent decrease of 1 percent of the secure habitat within any given GBAU outside of the recovery zones associated with the construction and use of permanent motorized routes will be analyzed. If secure habitat increases as a result of a motorized route(s) being closed or decommissioned within a given GBAU, the 1 percent secure habitat reduction would pertain to the updated baseline conditions. For future site-specific projects with permanent route construction that may affect more than 1 percent of a given GBAU, which is allowed but difficult to analyze programmatically, the effects of such will be analyzed during the site-specific project consultation as they would not fall under the level of effects analyzed here. While we analyze the effects of a permanent 1 percent decrease in secure habitat within any given GBAU, the Forest has described that it is extremely unlikely that they will permanently reduce secure habitat by the full one percent as the Forest has not constructed any new, permanent roads since 2009 (with the exception of some special use driveways to provide inholding access, although these are not within secure habitat due to buffers around inholdings).

We do not expect all permanent or temporary routes (including use of newly constructed routes and/or use of restricted routes) to have adverse impacts on female grizzly bears and/or their dependent offspring, or that all female grizzly bears and/or their dependent offspring would be adversely affected by these routes. Some adult females have proven that they are able to successfully reproduce and raise young in BMUs, subunits, and outside of the recovery zones that exceed research benchmarks for adverse effects to grizzly bears (Kasworm et al. 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 road, (i.e. does it affect secure habitat), length of the road, the frequency and intensity of use, and the duration the road would be on the landscape, in relation to those factors listed above for effects of roads.

Depending on the site-specific project information (size, location, duration, etc.), effects associated with permanent and/or temporary route construction and use, or temporary use of restricted routes could range from minor disturbance and insignificant effects to displacement of grizzly bears that may result in adverse effects to individual female grizzly bears. The effects of displacement and under-use of habitat related to motorized access (including the existing motorized access conditions, the potential permanent and/or temporary route construction and use, and temporary use of restricted routes) are tempered by local resource availability, resource condition, seasonal use, and the number of grizzly bears using an area. While ongoing adverse effects from existing low amounts of secure habitat and high route densities in some portions of the action area may result in the displacement of individual grizzly bears, the avoidance of suitable habitat, and/or the reduction of habitat to an unsuitable condition, we anticipate that these adverse effects would affect only few adult females and/or their dependent offspring over the remaining life of the Forest Plan. We conservatively include the potential for adverse effects in areas lacking female grizzly bear use due to the long time-frame that the Forest Plan will be in effect, during which some females may begin to use these GBAUs and experience some level of adverse effects from the ongoing motorized access conditions and low amounts of secure habitat and/or permanent routes, temporary routes, or temporary use of restricted routes that affect secure habitat. We would not expect significant effects until such time female grizzly bears begin using these areas.

Currently, the number of grizzly bears using the Forest varies. For some areas of the Forest, grizzly bears numbers are very low to none and are expected to increase slowly over time. This is particularly true for female grizzly bears and presence of female grizzly bears within some portions of the action area (Forest) is likely to increase slowly. For the GBAUs lacking female grizzly bear use, until such time that female grizzly bears begin to use these GBAUs, the ongoing effects of the existing motorized access conditions, limited permanent routes, temporary routes, and temporary use of restricted roads are not likely to result in adverse effects to grizzly bears. We conservatively include the potential for adverse effects in these areas due to the long time-frame that the Forest Plan will be effective, during which some females may begin to use these GBAUs and experience adverse effects from the ongoing motorized access conditions and low amounts of secure habitat and/or temporary roads or temporary use of restricted roads. 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 their home range, the number of other grizzly bears using the particular area, climate conditions, annual food resources, and the nature, intensity and duration of human activity during any particular year. All of these are factors that may affect options available to adult females if displaced. Additionally, conditions the following year may be considerably different. Thus, not all female grizzly bears and/or their dependent offspring that may use the action area during the life of the Forest Plan will experience significant effects related to motorized access management. If or when female grizzly bears begin to use the portions of the action area with very low to no grizzly bear use currently, specific areas with higher motorized route densities may lead to the under-use of suitable habitat by grizzly bears and may significantly impact some grizzly bears' ability to find food resources, breed and raise young, and find shelter. However, grizzly bears moving into these portions of the action area may be able to tolerate the existing levels of motorized route densities or may be able to entirely avoid areas with roads in some GBAUs without significant effects to breeding and/or feeding due to less competition from other grizzly bears.

The Service anticipates that winter motorized travel that may occur under the Forest Plan may incidentally result in some very low level of adverse effects to female grizzly bears with offspring during den emergence. Where grizzly bears and over-snow vehicle use generally overlap, 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 over-snow vehicle use to be significant to male grizzly bears or female grizzly bears without cubs.

In total, approximately 280,159 acres (8 percent) of modeled grizzly bear denning habitat are open to winter motorized travel during the den emergence period until May 15. While these acres are open 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). 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.

As grizzly bears expand their range and increase in numbers, the amount of grizzly bear-livestock conflicts and grizzly bear mortality associated with livestock grazing has also increased on the Forest. As this trend continues, it is likely that the Forest will continue to experience further increases in conflicts involving grizzly bears and livestock use. However, we conclude that continued livestock management under the Forest Plan contains measures that minimize the potential for adverse impacts to grizzly bears from livestock grazing activities.

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. Since 2009, 177 livestock conflicts (172 with cattle, 5 with sheep) have occurred on the Forest. Currently, the southern end of the Gravelly Landscape on the Madison Ranger District has the most livestock depredations by grizzly bears on the Forest, which is the area of the Forest where the majority of grizzly bears occur. Between 2009 and 2020, management removal of 4 grizzly bears and mortality of 5 grizzly bears related to self-defense by livestock riders and/or herders occurred on the Forest (all on the Madison Ranger District in the GYE). Since 2020, 4 additional grizzly bear mortalities have occurred associated with livestock grazing: 2 management removals in 2021, no mortality in 2022, and 2 management removals in 2023. Grizzly bear-livestock conflicts are likely to continue as long as livestock are on the landscape in those same areas where grizzly bears may be present. As data is not complete, information for 2024 is not included in these metrics.

We use the amount of grizzly bear management removals and self-defense mortalities that occurred between 2017 and 2023 to anticipate the amount of grizzly bear mortality likely to occur in the future. As described above, we will also add 1 grizzly bear mortality to each year to account for the potential higher number of management removals (estimated from unsuccessful management capture attempts) and the likelihood of an increase in conflicts as grizzly bear numbers and distribution increases. For the 7-year period of 2017 through 2023, 7 management removals of grizzly bears and 4 self-defense grizzly bear mortalities occurred for a total of 11 grizzly bear mortalities. Using these numbers and then adding 1 additional grizzly bear per year, we would expect no more than 18 grizzly bear mortalities associated with livestock grazing on the Forest over any given 7-year period.

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

Much of the action area is located outside of the recovery zones. The Recovery Plan stated that grizzly bears living within the recovery zones are crucial to recovery goals and hence to delisting. Grizzly bears inside and outside of recovery zones are listed as threatened under the Act, but only lands inside the recovery zones are managed primarily for the recovery and survival of the grizzly bear as a species. In developing the recovery zones, all areas necessary for the conservation of the grizzly bear were included.

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

CUMULATIVE EFFECTS

The implementing regulations for section 7 define cumulative effects as those effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Approximately six percent of the action area is non-federal land. As this biological opinion is at a programmatic scale for the entire Forest and due to the long duration of the Forest Plan, it is not possible to capture all cumulative effects that may occur during the life of the Forest Plan. The analysis below describes any known cumulative effects and provides a qualitative description of the types of potential cumulative effects we would expect during the life of the Forest Plan. While some actions and associated effects are not *certain* to occur, it is reasonable to assume they may occur at some point over the long life of the Forest Plan and this consultation considers the cumulative effects generally.

Due to the extremely large action area for the Forest Plan (the entire Forest), the long duration of the Forest Plan, and because information for non-federal entities is often incomplete or inaccurate, the cumulative effects analysis completed by the Forest was more of a qualitative approach. Below is a summary of potential effects based on the cumulative effects analysis provided by the Forest in the biological assessment, which is incorporated by reference (U.S. Forest Service 2024). 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.

Private lands occur within and adjacent to the action area. Activities such as vegetation and fire management, mineral, oil, and gas development, private land development (homes, roads, buildings, utility corridors), off-road motorized recreation, dispersed recreation, livestock grazing, hunting, and other actions may occur within these lands. As disclosed in this analysis, all of these activities could affect individual grizzly bears including but not limited to disturbance, habitat loss, habitat fragmentation, and increases in human-grizzly bear conflicts. Food and attractant storage issues on private land can create grizzly bear-human conflicts by providing attractants to grizzly bears.

Once grizzly bears become habituated and/or associated with a grizzly bear-human conflict, they may be removed. Human population growth could also result in additional grizzly bear attractants and further increase the potential for grizzly bear-human conflicts. As more people use private land and adjoining federal land for homes, recreation or business, the challenge to accommodate those uses in ways that continue to protect the grizzly bear population increases. Private lands continue to account for a disproportionate number of conflicts and grizzly bear mortalities in Montana. 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.

In addition to conflicts, activities on private land can also be expected to have local effects by altering habitat used by grizzly bears and/or disturbing or displacing grizzly bears. Activities that are currently occurring and are expected to continue into the foreseeable future on non-federal lands include but are not limited to maintenance and use of roads, trails, and utilities; recreational activities such as hunting, hiking, mountain biking, camping, horseback riding, driving, motorcycle and ATV riding; livestock grazing, ranching, and farming; mineral development; and timber harvest, fuels management such as thinning and/or burning, fire management, and gathering of firewood and miscellaneous forest products. Whether such effects are adverse or significant would be dependent on site-specific conditions, with effects ranging from some level of insignificant disturbance to more significant effects such as displacement. Any motorized access associated with these activities may add to the ongoing significant effects already occurring associated with high motorized access conditions and low amounts of secure habitat. However, not all effects would be significant due to the higher amounts of human activity already occurring in some areas of non-federal land. Effects to grizzly bear habitat conditions such as forage, cover, and denning are expected to be insignificant and similar to the effects described for the proposed action above.

Private land development may also lead to habitat fragmentation and could slow dispersal of grizzly bears. It is not possible to quantify effects to secure habitat from non-federal land activities, but the Forest buffers 500 meters from all inholding boundaries to account for potential effects from human activities on privately owned lands. However, conservation easements may maintain some lands for grizzly bear use by protecting against future development while supporting traditional land uses.

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.

The potential for effects to grizzly bears from black bear hunting with hounds exists. Hounds cannot discriminate between a black bear and grizzly bear scent and may track and chase either species during the spring bear season. The spring black bear hound hunting season is a critical time for all bears as they emerge from dens and seek sustenance to revive energy stores after hibernation. During spring emergence cubs are small and most dependent on their mothers for survival outside the den. As it is impossible for dogs to differentiate between grizzly bears and black bears, grizzly bears are vulnerable to pursuit and the chance for human confrontation increases as grizzly bears may become defensive when pursued and threaten the life of dogs or humans. Hounds could pursue grizzly bears and create excessive stress from being chased, deplete energy reserves, separate mothers and cubs, injure, or kill grizzly bears. Lion hunting with hounds does not have the same risk as the season lions can be hunted and the conventional practice of setting dogs upon an identified lion track significantly reduces the potential for a grizzly bear to be accidentally chased and effects are therefore discountable. While bear hunting with dogs this may not have been a widespread issue in previous years, increases and expansion of grizzly bear populations could lead to an increased probability of conflict. It is unlikely this event would lead to mortality because adult grizzly bears may become defensive, but it is possible injuries to people, dogs, or bears may occur as a result of this action.

Management of grizzly bears outside of the recovery zones is different than within the recovery zones. The Forest often lacks inventory information on non-Forest lands outside of the recovery zones and the best available information regarding motorized access on non-Forest lands outside of the recovery zone is unable to capture all effects of motorized access resulting from non-Forest actions. As such, a 500-meter buffer was placed around Forest land in those areas where

Forest land is adjacent to non-Forest land ownerships. Buffering Forest land 500 meters from non-Forest Service land ownerships is a conservative approach when considering effects to grizzly bears and will capture any unknown or undisclosed cumulative effects to grizzly bears that may result from non-Forest actions on non-Forest land that occur adjacent to Forest lands. For example, actions on adjacent non-Forest land could affect secure habitat on adjacent Forest lands, thus cumulatively affecting grizzly bears that use Forest land because areas within 500 meters of motorized access are not considered secure habitat. Accordingly, because it is very often unknown, Forest lands within 500 meters of lands not administered by the Forest may not provide secure habitat due to the potential cumulative effects associated with motorized access on adjacent non-federal lands. While it is possible that Forest land within 500 meters of non-Forest land may provide secure habitat, information as to activity on non-Forest land is often unknown or not disclosed. In addition, the Forest lacks management authority over non-Forest lands. As such, any secure habitat on Forest lands located adjacent to non-Forest land could be cumulatively affected at any time without the Forest's knowledge or authority, as it is not required. Therefore, to be conservative when analyzing cumulative effects to grizzly bears, in order to not miss any potential cumulative effects, Forest land within 500 meters of non-Forest land is buffered out of the secure habitat metric for the Forest. Due to the unknown or lack of information on non-Forest land we are unable to measure secure habitat on these lands. We are not assuming that non-Forest lands are not secure, however, we do not have enough accurate information to determine whether or not secure habitat occurs. Because of the long life of the Forest Plan, it is not possible to know everything that may occur on non-Forest land, nor is it required that non-Forest ownership inform the Forest or the Service of everything that may occur. Due to this potential lack of knowledge and because the Forest has no management authority on non-Forest lands, incorporating this buffer is a conservative approach and accounts for any cumulative effects to grizzly bears from actions that may occur on non-Forest lands without the Forest's knowledge. In other words, any potential unknown cumulative effects have already been incorporated into this analysis ahead of time. For example, if motorized access were to increase on non-Forest land adjacent to Forest land, cumulatively affecting grizzly bears in the action area associated with disturbance and/or displacement, the effects of such are already considered into the metrics of secure habitat that are measured for Forest lands. Accordingly, we would not miss any effects to secure habitat on Forest lands over time, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service 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 Forest Plan would continue to provide habitat for grizzly bears. Cumulative effects are not likely to result in significant effects to the NCDE and GYE grizzly bear populations 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 continued implementation of the Forest Plan on grizzly bears are not likely to jeopardize the continued existence of the listed entity of grizzly bear. No critical habitat has been designated for this species; therefore, none will be affected. Our conclusion is based on, but not limited to, the information presented in the biological assessment (U.S. Forest Service 2024), additional information received during this consultation process, information in our files, and informal discussions between the Service and the Forest.

Actions conducted under the Forest Plan may occasionally result in adverse effects to individual grizzly bears and/or dependent offspring over the remaining life of the Forest Plan, particularly as a consequence of the potential disturbance and/or displacement related to motorized access management and livestock grazing. The Forest is located in portions of the GYE and NCDE. Based on the best available scientific information reviewed in this consultation, such adverse effects will not negatively impact the recovery of the GYE or NCDE grizzly bear populations, nor the listed entity of grizzly bears. Further, we expect the Forest Plan direction will result in conditions that support continued grizzly bear use of the action area. Thus, it is our opinion that the continued implementation of the Forest Plan would not appreciably reduce the likelihood of both the survival and recovery of the listed entity of grizzly bears. Below we summarize key factors of our rationale for our no-jeopardy conclusion as detailed and analyzed in this biological opinion. These key factors include, but are not limited to, the following:

Factors related to the Forest Plan:

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

- 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 or helicopter use.

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

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

- Within the GYE recovery zone, no motorized routes occur within the Forest's portion of the Hilgard #1 subunit. Therefore, OMARD and TMARD are zero. Some roads outside of and immediately adjacent to the subunit influence secure habitat on the Forest's portion of the subunit, however, 90 percent of the Forest within the subunit is secure habitat. Access management within the recovery zone is not likely to result in adverse effects to grizzly bears.

- In general, outside of the GYE recovery zone, the ongoing effects of the existing (baseline) motorized access conditions, effects from potential permanent and/or temporary route construction and use, and/or effects from 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 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 permanent and/or temporary routes or temporary use of restricted routes to have adverse effects on female grizzly bears and/or their dependent offspring. The level of effects would depend on such things as grizzly bear use in the action area, 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 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 next 12 years, through 2036.

- 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.

- As winter motorized travel can occur through May 15, beyond the March 1 active bear year, 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 cannot be eliminated during the grizzly bear den emergence period.

- This late season winter motorized travel overlaps with approximately 280,159 acres (8 percent) of modeled grizzly bear denning habitat (U.S. Forest Service 2024). 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). 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 due to the long-term nature of the Forest Plan such use could occur in the future.

- Continued livestock grazing under the Forest Plan may result in 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. Other mortalities of grizzly bears may result related to defense of life situations with herders and/or riders.

- Currently, the southern end of the Gravelly Landscape on the Madison Ranger District has the most livestock depredations by grizzly bears on the Forest, which is the area of the Forest where the majority of grizzly bears occur.

- Since 2009 (through 2023), 177 livestock conflicts (172 with cattle, 5 with sheep) have occurred on the Forest. Not all conflicts result in the management removal or mortality of a grizzly bear.

- Between 2009 and 2020, management removal of 4 grizzly bears and mortality of 5 grizzly bears related to self-defense by livestock riders and/or herders occurred on the

Forest (all on the Madison Ranger District in the GYE). Since 2020, 4 additional grizzly bear mortalities have occurred associated with livestock grazing: 2 management removals in 2021, no mortality in 2022, and 2 management removals in 2023.

- The types of effects to grizzly bears that may result from continued livestock grazing under the Forest Plan have not changed from previous consultations on the Forest Plan; however, the level of effects have changed (increased) over time due to the increase and expansion of grizzly bear distribution and density 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.

- Permitted livestock grazing on the Forest is contingent on the continued implementation of numerous conservation measures that provide for protection and conservation of the grizzly bear. These conservation measures are designed to minimize grizzly bear-livestock and grizzly bear-human conflicts, reducing the overall incidence of adverse effects on grizzly bear. These measures are fully described in the biological assessment, which is incorporated by reference (U.S. Forest Service 2024).

- Based on the information for livestock grazing and the number of grizzly bears now and likely to inhabit the Forest over the life of the Forest Plan, we expect grizzly bear-livestock conflicts and/or grizzly bear mortality on the Forest to continue and increase.

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

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

Factors related to the GYE grizzly bear population:

- The best available information demonstrates that the GYE grizzly bear population has expanded 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 establish home ranges and find the resources needed to survive and reproduce outside the recovery zone despite the lack of mandatory habitat protections.

- As of 2020, bears occupied 70,468 square kilometers, which includes 48,898 square kilometers inside the DMA (98 percent of the DMA) and 21,570 square kilometers outside the DMA (U.S. Fish and Wildlife Service 2023).

- The GYE and NCDE grizzly bear populations are now only 57 kilometers (35 miles) apart, with multiple verified sightings between the two ecosystems (U.S. Fish and Wildlife Service 2022). This distance has steadily and significantly decreased in the last decade and it is likely that natural connectivity will occur in the near future (*Ibid*.).

- The Interagency Grizzly Bear Study Team (IGBST) is responsible for grizzly bear population monitoring in the GYE. In 2023, the model-averaged Chao2 estimate was 73 females with cubs within the DMA, from which a total population estimate for the GYE of 1,030 grizzly bears was derived (van Manen et al. 2024).

- All 18 BMUs were occupied by females with young in the last 6-year period (2017-2022) (U.S. Fish and Wildlife Service 2023).

- Long-term mortality rates for the GYE are below mortality thresholds for independent-age (2 years or older) females, independent-age males, and dependent young (U.S. Fish and Wildlife Service 2023).

- When assessing the mortality data, especially when considering the conservative nature of the Chao2 estimates of females with cubs, along with the additional demographic data, the data for the period 2001 through 2022 continue to show statistical evidence of population growth in all but 5 years (Karabensh et al. 2023).

- A Food Storage Order is in effect throughout the GYE recovery zone on National Forest lands and Yellowstone National Park as well as several areas outside of the recovery zone, including the entire Forest. These agencies have been successful at managing attractants on federal lands under the current food storage orders.

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

- The GYE encompasses about 5.9 million acres (9,209 square miles), of which 36 percent (2.1 million acres or 3,315 square miles) is comprised of National Forest designated wilderness lands and 39 percent (2.3 million acres or 3,591 square miles) is comprised of Yellowstone and Grand Teton National Parks. These areas contain the highest quality grizzly bear habitat. Considering these lands only, three-quarters of the GYE is essentially roadless or free of motorized use (75 percent). Finally, the National Forests also provide large blocks of core area within the recovery zone. These areas likely contribute significantly to reducing the number of human bear encounters and so increase security for grizzly bears.

- The overall habitat condition for grizzly bears in the GYE is excellent, with large amounts of secure habitat in the majority of the subunits. The recovery zone is about 9,025 square miles, of which about 7,889 square miles or 87 percent is secure habitat (van Manen et al. 2024).

Factors related to the NCDE grizzly bear population:

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

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

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

- Montana Fish, Wildlife and Parks research conducted between 2004 and 2011 indicated an increasing trend in numbers of NCDE grizzly bears (Mace and Roberts 2012). Costello et al. (2016) calculated a growth rate of 2.3 percent for grizzly bears in the NCDE. For the 6-year period of 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.

Based on a total population estimate of 1,030 grizzly bears in the GYE for 2023 (van Manen et al. 2024), the current distribution in the GYE (U.S. Fish and Wildlife Service 2022), and increased grizzly bear densities in the GYE, the Service concludes that the status of the GYE grizzly bear population is robust and is at or near recovery. Further, 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 motorized access conditions and livestock grazing may result in some low level of adverse effects to some of the individual female grizzly bears and/or their dependent offspring using the action area, considering the large size of the GYE and NCDE recovery zones, favorable land management within the recovery zones, the robust status of the GYE and NCDE grizzly bear population, adverse effects on grizzly bears as a result of motorized access conditions and livestock grazing would not have negative effects on the status of the GYE and NCDE grizzly bear populations. These populations are robust, the recovery zones are large, and management of grizzly bears within the recovery zones favors the needs of grizzly bears; these results signal successful federal land management related to grizzly bear recovery under the strategy detailed in the 1993 Recovery Plan. 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 2021). In sum, we conclude that the continued implementation of the Forest Plan is not likely to reduce the numbers, distribution, or

reproduction of grizzly bears in the action area and consequently in the listed lower 48 states listed entity.

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

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulations pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively without special exemption. *Take* is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. *Harm* is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. *Harass* is defined by the Service as an intentional or negligent act or omission that creates the likelihood of injury to listed wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. *Incidental take* is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

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

The life of the Forest Plan serves as the temporal bounds for this incidental take statement. Because timeframes for amendment or revision of the Forest Plan are uncertain, this incidental take statement expires in 12 years or until the end of 2036. For some activities implemented under the Forest Plan, the level of detail available is insufficient to identify with particularity all possible circumstances that may possibly involve the incidental take of listed species. Given the lack of specificity and information regarding future effects of actions implemented under the Forest Plan, providing the amount or extent of take would be speculative and unlikely to provide an accurate and reliable trigger for reinitiation of consultation for some effects. Consequently, with the exception of incidental take related to grizzly bears as described below, other potential for incidental take that we are unable to anticipate at this time is deferred to future consultation on individual projects. Any incidental take resulting from subsequent actions that proceed under the Forest Plan will be subject to section 7 consultation, as appropriate. In addition, take that may occur due to illegal activities by private citizens within the action area is not exempted in this incidental take statement.

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

Amount or Extent of Take Anticipated

Motorized Access (non-winter)

Based on research detailed earlier in this biological opinion, the Service has defined harm of grizzly bears in terms of adverse habitat conditions caused by high motorized route densities, resulting in low amounts of secure habitat, which may displace individuals from key habitat to the extent that significant under-use of habitat by grizzly bears may occur. Using the best information on the effects of motorized access on grizzly bears, we conclude that existing high motorized route densities and associated low amounts of secure habitat in portions of the action area are likely to result in some level of adverse effects to some female grizzly bears and/or their dependent offspring at some point during the life of the Forest Plan, primarily those that attempt to establish and maintain home ranges within the action area. Future permanent and/or temporary route construction and use, and/or temporary use of restricted routes may add to or increase the likelihood of such adverse effects. These adverse effects may result from potential displacement of grizzly bears from essential habitat. Displacement may result in significant under-use of key habitat when high amounts of motorized access exist on the landscape. The Service maintains that such under-use of otherwise suitable habitat within a grizzly bear's home range may constitute incidental take of individual female grizzly bears and/or their dependent offspring through "harm" as a result of significant habitat alteration that impairs breeding, feeding, and/or sheltering.

Portions of the action area have high levels of motorized routes while other portions have low levels of motorized routes or no motorized routes at all. With the exception of the Hilgard #1 subunit in the GYE recovery zone, we have previously analyzed portions of the action area using only linear motorized route density. Although providing the linear route density provides a useful threshold to describe human-caused effects to grizzly bears based on existing literature and gives an idea of the amount of roads in the action area, motorized route density or acreage alone fails to represent how these routes occur on the landscape and fails to consider how road placement affects habitat patch size (Proctor et al. 2019). For example, portions of the GBAUs may have high route densities (even within the GBAUs with lower overall linear route densities) while other portions of the GBAUs may have low route densities or even no motorized routes (even within the GBAUs with higher overall linear route densities). For instance, even in a GBAU with overall low road density, there may be patches of high road density interspersed with patches of low road density or even unroaded areas. Secure habitat has been identified as one of the key issues related to effects of motorized access on grizzly bears and is important to the survival and reproductive success of grizzly bears. While secure habitat is directly tied to 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 roads or trails where motorized access is possible are buffered when delineating secure habitat outside of the recovery zone, regardless of whether they are legally open or restricted to public travel. This calculation uses system and non-system routes where motorized access is permitted during all or part of the year, gated routes, undetermined routes not identified on page 53, routes that are discovered during project planning, and user-created routes that may be used in a frequent or chronic manner. This calculation does <u>not</u> include roads and trails where ground-truthing reveals conditions impassible to motorized vehicles (e.g. permanent barriers without breaches, decommissioned roads and trails without motorized access, and other situations). These assumptions are appropriate and necessary so as to not miss any potential effects to grizzly bears and give the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). This methodology acknowledges both that the Forest does not have standards limiting administrative use of roads outside of the recovery zones and that available data are less complete in this portion of the Forest in terms of the types and locations of closure devices and the condition of the road prism beyond the barrier. It is important to note that although this approach may result in a lower estimate of the existing amount of secure habitat, it assures that the impacts of motorized route use are not underestimated 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 effects to grizzly bears and will capture any unknown or undisclosed cumulative effects that may result from non-Forest actions on non-Forest land that occur adjacent to Forest lands. For example, actions on adjacent non-Forest land could affect secure habitat on adjacent Forest lands by having impacts within 500 meters of secure habitat. Accordingly, the Forest lands within 500 meters of lands not administered by the Forest may not provide secure habitat due to the potential effects associated with motorized access on adjacent non-federal lands. While it is possible that Forest land within 500 meters may provide secure habitat, information as to activity on non-Forest land is often unknown or not disclosed and the Forest lacks management authority over non-Forest lands. As such, the amount of secure habitat on Forest land adjacent to non-Forest land could change at any time without the Forest's knowledge or authority. Therefore, to be conservative when analyzing effects to grizzly bears, in order to not miss any potential effects associated with motorized access on non-Forest lands, Forest land within 500 meters of non-Forest land is buffered out of the secure habitat metric for the Forest. Because of the long life of the Forest Plan, it is not possible to know everything that may occur on non-Forest land and because the Forest has no control on non-Forest lands, this buffer accounts for any cumulative effects to grizzly bears that may have occurred from actions on non-Forest lands. In other words, any potential unknown effects associated with non-Forest lands have already been incorporated into this analysis ahead of time. For example, if motorized access were to increase on non-Forest land adjacent to Forest land, potentially affecting grizzly bears in the action area associated with disturbance and/or displacement, the effects of such are already considered into the metrics of secure habitat that are measured for Forest lands. Thus, we would not miss any effects to secure habitat on Forest lands over time, giving the benefit of the doubt to the species (U.S. Fish and Wildlife Service 1998). Using this conservative approach does not result in significant effects to the grizzly bear population.

The Forest is expected to update the secure habitat metrics as they update their 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 both the GYE and the NCDE in areas where grizzly bears may be present. Within the GYE recovery zone, portions of the Madison Ranger District overlap with a small portion of the recovery zone (a portion of Hilgard #1 subunit) and a portion of the DMA (portion of the Gravelly Landscape). The remainder of the Forest in the GYE is outside of these designations. Within the NCDE, the Forest intersects with NCDE Zone 2. The area of the Forest overlapping NCDE Zone 2 includes portions of the Butte and Pintler Ranger Districts. The remainder of the Forest is located outside of the GYE and NCDE.

The existing motorized access conditions within the Hilgard # subunit in the GYE recovery zone are not expected to result in significant effects or incidental take of grizzly bears. Outside of the recovery zone, the estimated amount of secure habitat on the Forest ranges from a low of 16 percent of Forest land (13 percent of the entire GBAU) in the Dry Cottonwood GBAU to a high of 83 percent of Forest land (82 percent of the entire GBAU) in the Lee Metcalf South GBAU. Of all 43 GBAUs delineated on the Forest, two have less than 20 percent secure habitat on Forest land, seven have between 20 and 29 percent secure habitat on Forest land, ten have between 30 and 39 percent secure habitat on Forest land, eight have between 40 and 49 percent secure habitat on Forest land, seven have between 50 and 59 percent secure habitat on Forest land, and nine 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 Forest Plan. Ongoing displacement of grizzly bears may be occurring due to the potentially significant under-use of key habitat by female grizzly bears and/or their dependent offspring and may constitute incidental take of grizzly bears through "harm" as a result of significant habitat alteration that impairs breeding, feeding and/or sheltering.

Given the lack of forest plan direction requiring specific levels of secure habitat in the areas outside of the recovery zones, it's possible that projects may permanently reduce secure habitat or more likely, temporarily reduce the effectiveness of the existing secure habitat. Given the variation in individual projects, the potential effects of permanent and 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, permanent and/or temporary routes could be constructed completely outside of secure habitat and outside of the 500-meter buffer in close proximity to existing routes and would have no effect on secure habitat. Other circumstances may include temporary or permanent route construction and use within 500 meters of secure habitat but not directly within secure habitat, affecting the edge of secure habitat. Finally, sometimes temporary or permanent roads are built directly within secure habitat; thus, affecting or potentially splitting a secure habitat polygon. Depending on the circumstances of the new roads as described above, the new roads may or may not affect secure habitat.

The construction and use of permanent and/or temporary routes and/or temporary use of restricted routes for motorized access may increase the likelihood of displacement of grizzly bears in or near a project area. While not specifically proposed under the Forest Plan, permanent and/or temporary route construction and use, and/or temporary use of restricted routes may occur on a project-by-project basis. Permanent routes may be used during the short-term for a project and then restricted with a barrier with the potential for future administrative use or may be used for the long-term and receive a substantive amount of use if kept in an open status. Temporary routes built or restricted routes temporarily used may be short-term in duration of use or may remain on the landscape for several years and receive a substantive amount of use. Depending on the site-specific project information (size, location, duration, etc.), effects associated with permanent and/or temporary route construction and use, or temporary use of restricted routes could range from minor disturbance and insignificant effects to displacement of grizzly bears that may result in adverse effects.

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

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

As detailed in this biological opinion, we anticipate that existing motorized access conditions, permanent motorized route construction and use, temporary motorized route construction and use, and temporary use of restricted routes would affect only a very few adult females over the over the life of the Forest Plan because grizzly bears occur at low densities in the action area and numbers of females are expected to increase only slowly over time in much of the action area. Also, substantial increases in road densities are not expected. If subadult females move into portions of the action area further away from the recovery zone seeking to establish home ranges, they would be exposed to levels of roading that would factor into home range selection, and that level of roading is not likely to significantly increase. Therefore, the take we anticipate would be harm to only a very low number of female grizzly bears and/or their dependent offspring that may inhabit the action area now and into the future, over the life of the Forest Plan. We expect harm would be caused by significant under-use of key habitat in areas affected by high road densities to levels that result in decreased fitness and impaired reproductive potential. In other words, infrequently and in site-specific circumstances, an adult female grizzly bear wary of humans and human-generated disturbance may not breed at its potential frequency or may fail to complete gestation due to decreased fitness. As some adult females have proven that they are able to successfully reproduce and raise young in areas that have high motorized access conditions, we do not expect all adult female grizzly bears and/or their dependent offspring affected by less than optimal motorized access conditions to suffer impairment of breeding, feeding, and/or sheltering, nor would we expect any female to experience permanent effects (lasting more than one reproductive cycle) as they would likely adapt. Variables such as annual climate and resulting habitat and food resource conditions, the level of roading, and the number of grizzly bears using an area may change over time and are all factors influencing the displacement within a home range.

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. 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.

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

Therefore, determining the precise amount of take, as defined by impaired reproductive potential (as affected by feeding and sheltering), is difficult. The amount of take would be also difficult to detect for the following reasons:

1) Grizzly bears are not easily detected or observed in the wild.
2) Reproductive rates of female grizzly bears and/or their dependent offspring vary naturally due to environmental and physiological causes.
3) A reduction in "normal" reproductive success is not discernable in the wild.
4) The reasons a grizzly bear fails to breed and/or failure to complete gestation are not discernable in the wild.

According to Service regulations implementing the Act (50 C.F.R. § 402.14(i)(1)(i)) and as stated in the Endangered Species Consultation Handbook (March 1998) (Handbook), some detectable measure of effect should be provided, such as the relative occurrence of the species or a surrogate species in the local community, or amount of habitat used by the species, to serve as a measure for take. Take also may be expressed as a change in habitat characteristics affecting the species (Handbook, p 4-47 to 4-48). In instances where incidental take is difficult to quantify, the Service uses a surrogate measure of take. The number of grizzly bears that use the action area is unknown but grizzly bears have been documented. However, female grizzly bears have yet to be verified within some portions of the action area. The mechanism of female grizzly bear dispersal makes it likely that only relatively few female grizzly bears would occupy much of the action area during the life of the Forest Plan. Therefore, for reasons explained above, the Service anticipates that incidental take of adult female grizzly bears and/or their dependent offspring would be very low and would occur only infrequently over the life of the Forest Plan in the form of harm related to the displacement effects of existing motorized access, permanent

and/or temporary road construction and use, and temporary use of restricted roads. As incidental take associated with motorized access is difficult to quantify, we will express incidental take as a change in habitat characteristics and conditions affecting grizzly bears, specifically secure habitat.

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

Surrogate 1

We expect some level of incidental take associated with the ongoing effects of the existing motorized access conditions within the action area. Our **first surrogate measures of incidental take of grizzly bears** will be represented by the habitat conditions resulting from the existing motorized access conditions on the Forest that may continue to result in some level of 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. The Forest does not measure OMARD or TMARD in areas outside of the recovery zones. 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 on the Forest will represent the incidental take associated with existing motorized access conditions within the GBAUs outside of the recovery zones. Table 6 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.

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.

Table 6. Existing secure habitat within the action area outside of the recovery zones (U.S. Forest Service 2024).

GBAU	Estimated Percent of Forest Land Providing Secure Habitat
Fleecer	23 %
Pintler	77 %
Ruby	58 %
Seymour	70 %
Tie	37 %
Upper Big Hole	45 %
Basin	21 %
Little Boulder	37 %
Upper Boulder	23 %
Dry Cottonwood	16 %
East Flints	53 %
Georgetown	47 %
Harvey Willow	30 %
South Flints	26 %
West Flints	19 %
Black Butte	62 %
Greenhorns	53 %
Snowcrest	71 %
Wall Creek	58 %
West Fork Madison	47 %
Bull	21 %
Highland	26 %
O'Neill	36 %
Governor	51 %
Medicine Lodge	42 %
Muddy Creek	23 %
Selway	39 %
Sheep Creek	45 %
Upper Horse Prairie	32 %
Lee Metcalf North	66 %
Lee Metcalf South	83 %
Birch Creek	36 %
Browns Lake	56 %
Bryant Creek	41 %
Maverick	63 %
Pettengill	61 %
Quartz Hill	40 %
Meadow Creek	35 %
Mill Creek	36 %
South Boulder	38 %
Copper	54 %
Ross Fork	63 %
Stony	44 %

As described in the biological opinion above and in surrogate measure 2 below, reductions in secure habitat in the GBAUs may occur as a result of permanent route construction (affecting up to 1 percent of secure habitat in a given GBAU). Thus, secure habitat in the GBAUs represented in surrogate measure 1 above could decrease within any given GBAU by 1 percent and not exceed the amount of incidental take exempted. However, a site-specific consultation (likely a tiered consultation) will occur associated with such permanent construction. If the existing conditions become worse than what is displayed in Table 6 above due to changes on the ground and no project-specific consultation occurred, then the level of incidental take we anticipate in our first surrogate measure of take would be exceeded and therefore the level of take exempted would be exceeded.

Surrogate 2

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

For future site-specific projects with permanent route construction that may affect more than one percent of a given GBAU, the effects of such will be analyzed during the site-specific project consultation as they would not fall under the level of effects analyzed or incidental take provided here. If secure habitat within any given GBAU is permanently reduced by more than a total of 1 percent as a result of permanent route construction and use and no additional site-specific consultation occurs then the level of incidental take we anticipate in our second surrogate measure of take for the area outside of the recovery zones would be exceeded and therefore the level of take exempted would be exceeded associated with this incidental take statement. Additional incidental take over the 1 percent may be exempted during the site-specific consultation.

Surrogate 3

Vegetation or other management actions often require the construction and use of temporary routes or temporary use of restricted routes for motorized access. While not specifically proposed under the Forest Plan, temporary route construction and use, and temporary use of

restricted routes may occur on a project-by-project basis. Temporary routes constructed may be short-term in duration of use or may remain on the landscape for several years and receive a substantive amount of use. If it is determined that the construction and use of temporary routes or temporary use of restricted routes for a specific action will not adversely affect grizzly bears then we would not expect any incidental take associated with that action and this incidental take statement would not apply. For those scenarios where temporary routes may result in adverse effects to grizzly bears, some level of incidental take of grizzly bears may occur as described below. As such, we do expect some level of incidental take associated with the construction and use of temporary routes and/or temporary use of restricted routes within the action area over the life of the Forest Plan. Our third surrogate measure of incidental take of grizzly bears will be represented by the temporary effects to secure habitat 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.

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

In sum, the estimated amounts of secure habitat outside the recovery zone affected by temporary route construction and use and/or temporary restricted route use represents our **third surrogate measure of incidental take of grizzly bears** that we anticipate in regards to motorized access. If more than 5 percent of the secure habitat is affected in any individual GBAU outside of the recovery zones at any given time as a result of temporary route construction and use and/or temporary use of restricted routes then the level of incidental take we anticipate in our third surrogate measure of take for the area outside of the recovery zones would be exceeded and therefore the level of take exempted would be exceeded.

Winter Motorized Use

In addition to non-winter motorized access, the Service anticipates that winter over-snow vehicle use (e.g. snowmobile) that may occur under the Forest Plan may incidentally result in some very low level of take of female grizzly bears with offspring during den emergence. Winter motorized travel on the Forest is managed from December 2 through May 15. As the grizzly bear population continues to grow and expand, grizzly bears could den within areas not previously known to have active grizzly bear denning. Across the Forest, outside of the recovery zone (within the GBAUs), approximately 483,016 acres are modeled as grizzly bear denning habitat, which equates to about 13 percent of the GBAUs outside of the recovery zone (Table 2). The active bear year includes March 1 to November 1 for the GYE and April 15 to November 15 for the NCDE portions of the Forest. For the purposes of this analysis and incidental take

statement, we use the more conservative March 1 to November 1 as the active bear year and November through February as the denning season.

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

The Forest modeled denning habitat within their portion of the Hilgard #1 subunit within the recovery zone. Approximately 16,742 acres of modeled denning habitat occurs on the Forest's portion of the Hilgard #1 subunit. The Forest estimated that approximately 341 acres of winter motorized travel overlaps modeled grizzly bear denning habitat in the Hilgard #1 subunit. This is a very small portion of the Hilgard #1 subunit and no significant effects associated with winter motorized use are expected.

As winter motorized travel can occur on the Forest from December 2 to May 15, the Forest does have some areas where winter motorized travel may occur during the grizzly bear den emergence period. Approximately 280,159 acres or 8 percent of modeled grizzly bear denning habitat are open to winter motorized travel during the den emergence period across the Forest outside of the recovery zone. See Table 2 for amounts of denning habitat that overlap with winter motorized allocations within the GBAUs. 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.

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

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

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

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

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

Discovery of an individual grizzly bear injury or mortality attributed to over-snow vehicle use is very unlikely. The exact number of grizzly bears in the population is unknown, den site locations are generally unknown, and the exact levels, frequency, and location of over-snow vehicle use is not known. The number of females with cubs, pregnant females, den emergence dates, and over-snow vehicle use varies each year due to a number of factors, including snow

conditions. All of these variables are difficult to monitor or census. The Service concludes that the level of take of grizzly bears that would result from over-snow vehicle use would be very low based on the best available grizzly bear population information, the amount of protected and unprotected denning habitat available on the Forest, the characteristics of most grizzly bear den sites, expert opinion of grizzly bear researchers, and the best available information on grizzly bear denning.

As described above, some detectable measure of effect should be provided, such as the relative occurrence of the species or a surrogate species in the local community, or amount of habitat used by the species, to serve as a measure for take. Take also may be expressed as a change in habitat characteristics affecting the species. In instances where incidental take is difficult to quantify, the Service uses a surrogate measure of take. The number of grizzly bears that use the action area is unknown but grizzly bears have been documented. For reasons explained above, the Service anticipates that incidental take of adult female grizzly bears would be very low and would occur only infrequently over the life of the Forest Plan in the form of harm related to the effects of existing winter motorized use. As incidental take associated with winter motorized use is difficult to quantify, we will express incidental take as an amount of habitat used by grizzly bears that may be affected by winter motorized use, specifically grizzly bear denning habitat.

Surrogate 4

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

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, about 280,159 acres of modeled grizzly bear denning habitat outside of recovery zones are open to over-snow vehicle use during the during the den emergence period beyond March 1. While these acres are open during the den emergence period, from a qualitative review, not all of these acres of cross-country over-snow vehicle use are available for such due to either the ruggedness of the terrain or logistical limitations (e.g., fuel). In addition, some drier and lower elevation areas may not be available to late season over-snow vehicle use due to a lack of snow.

Thus, in total, approximately 280,159 acres of modeled grizzly bear denning habitat overlap late season over-snow vehicle use beyond March 1. These acres of modeled grizzly bear denning habitat and potential over-snow motorized use represent the **fourth surrogate measure of the incidental take of grizzly bears** that we anticipate as a result of the Forest Plan. If the amount of grizzly bear denning habitat open to authorized over-snow vehicle use after March 1 exceeds the miles and acres provided in the fourth surrogate measure of take, then the level of incidental take we anticipate in our fourth surrogate measure of take would be exceeded and therefore the level of take exempted would be exceeded.

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. Livestock grazing on the Forest will continue to pose risks as grizzly bear numbers increase in these areas. 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. In addition, grizzly bear mortalities related to defense of life and/or property associated with herders and or riders may also occur.

The risk of adverse impacts to grizzly bears do exist associated with continued livestock grazing under the 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.

Permitted livestock grazing on the Forest is contingent on the continued implementation of numerous conservation measures that provide for protection and conservation of the grizzly bear. These conservation measures are designed to minimize grizzly bear-livestock and grizzly bear-human conflicts, reducing the overall incidence of adverse effects on grizzly bear. For example, conservation measures required in permits addressing livestock carcass management and food storage can reduce the likelihood of a grizzly bear-human conflict. Conservation measures from previous consultations that are still appropriate and effective were brought forward into this consultation along with the inclusion of additional measures that have been ongoing in the GYE but not previously stated. These measures are described in the biological assessment, which is incorporated by reference (U.S. Forest Service 2024).

Information and education requirements with permittees will also contribute to reducing circumstances that could cause a grizzly bear-human conflict with increased training on how to work in bear country. Annual meetings with permittees and cooperating agencies (MFWP and WS) also increase understanding of bear use and activity throughout the Forest, which contributes towards grizzly bear conservation. In addition, the Forest will follow the nuisance bear standard for nuisance bear management. These standards are embedded within the Forest Plan.

While the conservation measures and information and education requirements are expected to reduce and minimize the level of grizzly bear-livestock conflicts and depredations of livestock as well as grizzly bear-human conflicts, not all situations will be avoided. For example, while the number of carcasses will be reduced, we recognize that complete carcass removal throughout the Forest is not possible. Thus, some level of grizzly bear management removal related to livestock conflicts or depredations or mortality related to self-defense is inevitable. As the number of grizzly bears continues to increase in the action area, an increase in the number of grizzly bears subject to potential management removal or mortality as a result of grizzly bear-livestock and

grizzly bear-human conflicts may occur. Consequently, livestock management on the Forest has the potential to result in some level of incidental take of grizzly bears 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 a modification of natural feeding behavior from wild animals to livestock that may in some cases ultimately lead to management removal or defense of life mortality of grizzly bears (such as a surprise encounter near a carcass site due to a bear defending the carcass).

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.

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 continued livestock grazing under the 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.

As described above, given the increasing number of grizzly bear-livestock conflicts and management actions on the Forest since 2009 (Table 9 in the biological assessment), we expect the number of conflicts, removals, and grizzly bear mortalities associated with livestock grazing to continue to increase over the life of the Forest Plan. It is difficult, however, to accurately predict the exact number of conflicts, grizzly bear management removals, and grizzly bear mortalities, though we expect the number will increase through time as the density of grizzly bears increases. The following approach recognizes both the uncertainty and the expectation for increasing conflicts associated with livestock grazing on the Forest. We are not intending to limit the activities necessary to manage grizzly bears by implementing this approach, but instead are intending to provide a reasonable estimate of what we expect could happen over the next 12 years.

The number of grizzly bear-livestock conflicts have increased from 0 in 2009 to a high of 43 in 2021, with numbers varying in between for the remaining years. Since 2009, as a result of grizzly bear-livestock conflicts, management removal of grizzly bears has occurred 8 times and mortality of grizzly bears related to self-defense (riders/herders) has occurred 5 times. The increase in conflicts over time is not due to an increase in livestock numbers or allotments but mainly due to a growing and expanding grizzly bear population. We expect the population will continue to grow and expand. While we display the conflict data back through 2009, very few conflicts occurred and no management removals occurred until 2015. Only 1 grizzly bear management removal occurred in 2015 and no grizzly bear mortalities occurred in 2016. Further, no mortality associated with grazing-related to self-defense occurred prior to 2013 and none occurred again until 2017. Thus, we have used conflict, removal, and self-defense mortality data from the 7-year period between 2017 (the year conflicts began to increase considerably) through 2023 (most current complete data) to forecast anticipated management removals and grizzly bear mortalities associated with livestock grazing on the Forest into the future (12 years) as that is most representative of the increasing geographic distribution of grizzly bears as well as the increasing number of grizzly bears.

On average, approximately 24 conflicts occurred per year over the 7-year period from 2017 through 2023 (noting that the total number of conflicts was 167 and varied from 14 to 43 in any given year). As a result of these conflicts, 7 grizzly bear management removals occurred during this same time-frame along with 4 grizzly bear mortalities related to self-defense from riders and herders for a total of 11 grizzly bear mortalities from 2017 through 2023. As the data on grizzly bear-livestock conflicts and/or depredations and any associated grizzly bear management removals is not complete for 2024, while some information is acknowledged in the baseline section in the biological opinion, any information for 2024 is not incorporated into the metrics for this incidental take statement. As grizzly bear numbers and distribution increases, these numbers may increase somewhat as well. In addition to the grizzly bear management removals that occurred, several attempts were made to trap and capture grizzly bears associated with livestock conflicts that were unsuccessful. The number of unsuccessful management capture attempts varies from 1 to 5 in any given year, with an average of 2.5 attempts per year between 2017 and 2020. No unsuccessful management capture attempts occurred during the period 2021 through 2024. Had these capture attempts been successful, it is unknown as to whether relocation or management removal of the offending grizzly bear would have occurred. However, it is reasonable to assume that had some of these attempts been successful, the number of grizzly bear management removals could be higher in those years years.

We do not know exactly how many conflicts or management removals will occur in any given year in the future. Based on the 11 known grizzly bear mortalities over the 7-year period from 2017 through 2023, we would expect, on average, close to about 2 grizzly bear mortalities associated with livestock grazing in any given year. However, we also expect the rate of grizzly bear mortalities will continue to increase as the grizzly bear population and distribution increases on the Forest and we need to account for the potential management capture attempts that were unsuccessful. As grizzly bears continue to increase in density and distribution in Montana, relocation of grizzly bears is less common than removal. To account for the potential higher number of management removals (based on unsuccessful management capture attempts) and the likelihood of an increase in conflicts as grizzly bear numbers and distribution increases, we will include 1 additional grizzly bear per year to the expected amount of management removals in the

future (based on the minimum number of unsuccessful management capture attempts in any given year between 2017 and 2023).

Management removal of grizzly bears or self-defense grizzly bear mortalities may not occur every year and in some years multiple management removals and/or self-defense grizzly bear mortalities may occur. For example, no grizzly bear management removals or self-defense grizzly bear mortalities occurred in 2016 or 2022 and only 1 grizzly bear management removal or self-defense mortality occurred in 2015 and 2019. However, 1 grizzly bear management removal and 1 self-defense grizzly bear mortality occurred in both 2017 and 2018 (2 total grizzly bear mortalities each year), 2 self-defense grizzly bear mortalities occurred in 2020, and 2 management removals occurred in both 2021 and 2023.

Because we expect the number of grizzly bear mortalities to be higher in some years and lower in others, it does not make sense to analyze the effects with specific annual numbers. Thus, to account for differences between years, we use a rolling window to analyze and measure the effects of livestock grazing and incidental take of grizzly bears. We use the amount of grizzly bear management removals and self-defense mortalities that occurred between 2017 and 2023 to anticipate the amount of grizzly bear mortality likely to occur in the future. As described above, we will also add 1 grizzly bear mortality to each year to account for the potential higher number of management removals (estimated from unsuccessful management capture attempts) and the likelihood of an increase in conflicts as grizzly bear numbers and distribution increases. For the 7-year period of 2017 through 2023, 7 management removals of grizzly bears and 4 self-defense grizzly bear mortalities occurred for a total of 11 grizzly bear mortalities. Using these numbers and then adding 1 additional grizzly bear per year, we would expect no more than 18 grizzly bear mortalities associated with livestock grazing on the Forest over any given 7-year period. This amount represents our **fifth surrogate measure of the incidental take of grizzly bears** that we anticipate as a result of the Forest Plan in the form of harm through habituation and/or modification of natural feeding behavior associated with livestock grazing. The Service believes this level of incidental take in the form of harm is proportional to the management actions taken or attempted 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 a bear killed in defense of life by herders or riders).

Tracking of grizzly bear mortalities would begin with the most-recent 7-year period from issuance of this biological opinion and would then be tracked on a sliding scale. For example, tracking for 2025 would reflect the most recent 7 years of mortality data associated with livestock grazing including the years 2019, 2020, 2021, 2022, 2023, 2024, and 2025; tracking for 2026 would include the years 2020, 2021, 2022, 2023, 2024, 2025, and 2026; tracking for 2027 would include the years 2021, 2022, 2023, 2024, 2025, 2026, and 2027; and so on through 2036.

In summary, should more than 18 grizzly bears be removed from the Forest related to livestock grazing during any given 7-year period over the next 12 years, through the end of 2036, then the level of incidental take we anticipate in our fifth 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 Forest Plan, up to 12 years, if the following scenarios occur then the level of incidental take we anticipate associated with continued implementation of the 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 decrease in the amount of secure habitat in the GBAUs associated with the existing motorized access conditions from the amounts displayed in Table 6 in our first surrogate measure of take above that are not associated with a modeling or calculation errors, permanent changes associated with our second surrogate measure of take (see above), and/or temporary changes associated with our third surrogate measure of take (see above);
2) Permanent decreases of more than 1 percent of the secure habitat within the GBAUs occur over the amounts displayed in Table 6 in our first surrogate measure of take above and described in our second surrogate measure of take above and are not associated with a modeling or calculation errors;
3) Temporary route construction and use and/or temporary restricted route use that effects more than 5 percent of secure habitat in an individual GBAU at any given time as described in our third surrogate measure of take above;
4) Authorized late season winter motorized use after March 1 that overlaps more than 280,159 acres of modeled grizzly bear denning habitat as described in our fourth surrogate measure of take above; and/or
5) More more than 18 grizzly bears removed from the Forest related to livestock grazing during any given 7-year period over the next 12 years, through the end of 2036, as described in our fifth 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 regional food and attractant storage order expires after 5 years, it is possible (although unlikely) that the Forest is without a food and attractant storage order at some point during the life of the Forest Plan. As previously stated, we reasonably expect (based on past history) that additional food and attractant storage orders that apply Forest-wide will continue to be issued, reissued, or extended for life of the Forest Plan. It is unlikely that a food and attractant storage order would not be in effect at any given time during the life of the Forest Plan. However, if at any given time, a food and attractant storage order is not in effect during the life of the Forest Plan, additional effects to grizzly bears may result that have not been previously analyzed and reinitiation of consultation on the Forest Plan may be necessary.

Effect of the take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. The amount of incidental take described above is low. The majority of the action area occurs outside of the recovery zones. As detailed in this

opinion, and according to the 1993 recovery plan (U.S. Fish and Wildlife Service 1993), most lands outside of the recovery zones are not considered biologically essential to recovery of the species. Further, considering the grizzly bear recovery strategies and the size, status, and distribution of the GYE and NCDE grizzly bear populations, incidental take of grizzly bears in the action area would not affect the recovery of the listed entity of grizzly bears. The Forest Plan implements several measures that would sufficiently minimize effects 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 Forest Plan reduces the potential for and minimizes the overall effect of incidental take of grizzly bears. The Service further believes that the conservation measures associated with continued livestock grazing under the Forest Plan adequately reduces the potential for and minimizes the effect of incidental take of grizzly bears associated with livestock grazing. The conservation measures and information and education requirements are described in the biological opinion above as well as the biological assessment, which is incorporated by reference (U.S. Forest Service 2024). These measures serve to minimize the potential for incidental take of grizzly bears related to livestock grazing on the Forest. No additional reasonable and prudent measures are necessary to minimize the impacts of incidental take of grizzly bears associated with livestock grazing. The following reasonable and prudent measure is appropriate to further minimize the impacts of incidental take of grizzly bears associated with motorized access.

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

Terms and Conditions

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

To implement Reasonable and Prudent Measure #1:

1. 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.

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

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

Reporting requirements

To demonstrate that the Forest Plan is adequately reducing the potential for and minimizing the effect of any incidental take that may result, the Forest shall complete a report with the information listed below and submit it to the Service's Montana Field Office annually by April 1 for the preceding calendar year for the life of the 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 amount of secure habitat for the GBAUs. Provide rationale for any changes that occur from the metrics displayed in the first surrogate measure of incidental take to differentiate 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 or updates associated with new permanent route construction as described in the second surrogate measure. In addition, report the existing conditions along with any updates to the baseline for project-related GBAUs at the time of site-specific section 7 project consultations.

2. In relation to the third surrogate measure of incidental take of grizzly bears and term and condition 1, provide an up-to-date record of the percent of secure habitat temporarily affected within the GBAUs outside the recovery zones from new temporary route construction and use and/or temporary use of restricted routes and the duration that new temporary routes are on the landscape and/or the duration restricted routes were used for site-specific projects.

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

4. To demonstrate that the continued livestock grazing under the Forest Plan is adequately reducing the potential for and minimizing the effect of any incidental take that may result, the Forest shall provide an up-to-date record of grizzly bear-human conflicts, grizzly bear management removals, and grizzly bear mortalities related to defense of life associated with livestock grazing activities. The report shall be structured by calendar year. In addition, notify the Service's Montana Ecological Services Office within 72 hours of any grizzly bear mortalities associated with livestock grazing on the Forest.

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 illegal motorized access that occurred during the preceding two calendar years and how the Forest responded. Include information such as (but not limited to): the location of illegal motorized access, the type of barrier breached, how

the barrier was breached, the date the Forest became aware of the illegal motorized access, how the Forest responded to the illegal motorized access, and the date the Forest carried out its response.

Closing Statement

The Service is unable to precisely quantify the number of grizzly bears that will be incidentally taken as a result of the Forest Plan. Therefore, we use surrogate measures for the amount of incidental take we anticipate based on habitat characteristics and/or conditions affecting grizzly bears, specifically secure habitat (non-winter motorized access), modeled denning habitat (winter motorized access), and habituation and/or modification of natural feeding behavior associated with livestock grazing. We use the existing levels of motorized access management, effects from permanent route construction in the GBAUs, and effects from temporary route construction and use, and temporary use of restricted routes as our first, second, and third surrogate measures of incidental take of grizzly bears related to motorized access management. We use the amount of grizzly bear denning habitat that overlaps late-season winter motorized use as our fourth surrogate measure of incidental take of grizzly bears. We use the amount of no more than 18 grizzly bear mortalities associated with livestock grazing on the Forest over any given 7-year period as our fifth surrogate measure of the incidental take of grizzly bears.

Reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. We have included a reasonable and prudent measure 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 route densities. By managing motorized access, several grizzly bear management objectives could be met including: (1) minimizing human interaction and potential grizzly bear mortality; (2) minimizing displacement from important habitats; (3) minimizing habituation to humans; and (4) providing relatively secure habitat where energetic requirements can

be met (Interagency Grizzly Bear Committee 1998). Additionally, lower route densities would also benefit other wildlife and public resources.

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

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

REINITIATION NOTICE

This concludes consultation on the effects of the continued implementation of the Forest Plan on grizzly bears. As provided in 50 C.F.R. § 402.16, reinitiation of formal consultation is required where discretionary federal involvement or control over the action has been maintained (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 (4) if a new species is listed or critical habitat designated that may be affected by the identified action.

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