Public Comments Processing
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US Fish and Wildlife Service
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On behalf of the undersigned organizations and individuals, please accept the following comments regarding the U.S. Fish and Wildlife Service's January 2024 Notice of Intent to Prepare an Environmental Impact Statement for the Bitterroot Grizzly Bear Project. 89 FR 3411. According to the NOI, the Draft EIS will evaluate the potential environmental impacts of restoring the grizzly bear (Ursus arctos horribilis) to a portion of its historical range within the Bitterroot Ecosystem (BE) in Montana and Idaho. The following comments detail numerous issues and information that the U.S. Fish and Wildlife Service must consider and address as it prepares the Draft EIS.

Legal Status

The current legal status of all grizzly bears within the lower 48 states is Threatened under the ESA. The Experimental, Non-essential (ENE) population status under Section 10(j) of the ESA likely does not apply to the Bitterroot Ecosystem. There are several factors upon which a court is likely to find that this alternative is not legally available.

1) To qualify for ENE, an area must be wholly geographically separate from other populations of the same species. As shown in Figure 1, the Continuously Occupied Habitat Area for the NCDE is within the Bitterroot Mountains and has touched the 2000 Recovery Area. Moreover, there have been numerous verified observations of grizzly bears within the Bitterroot Ecosystem including photographs, a den site, tracks, and mortalities.
2) The USFWS has also mapped May be Present (Species List Map).
3) Immigrants to the BE could only have possibly come from the NCDE, CYE and SE (verified) or GYE populations so it is not wholly separate genetically.

NEPA requires that alternatives be reasonable. An ENE alternative may be struck down by a court as not legal. Such an alternative might be considered unreasonable if it cannot be implemented.

I. General Issues That Need to be Addressed and Tasks That Need to be Accomplished in an EIS for the Bitterroot Ecosystem

A. Habitat and Diet

1. Undertake and report a rigorous geospatial analysis of biophysically suitable habitat for grizzly bears that is not confined to the current Recovery Area, but instead encompasses all north-central, central, and south-central Idaho and immediately adjacent Montana (hereafter "comprehensive study area").
2. Differentiate this analysis of biophysically suitable habitat by bear-centric seasons.
3. Undertake and report a rigorous and geospatially stratified analysis of prospective grizzly bear diets in the comprehensive study area.
4. Undertake and report a rigorous analysis of how climate change during the next 50-100 years will affect grizzly bear foods and habitats in the comprehensive study area, along with how these changes will affect prospects for recovery under different alternatives.
5. Undertake and report a rigorous geospatial analysis of potential grizzly bear densities along with an estimate of total potential population sizes at full recovery for different prospective management areas.

B. Population Status and Trend

6. Describe and justify in specific terms how burden of proof is allocated now and will be in the future for making determinations about the resident status of grizzly bears documented in and near the Bitterroot Ecosystem.
7. Provide details on methods for monitoring status of grizzly bears in the BE, including an explicit assessment of statistical power for detecting trends in both bear numbers and genetic diversity.

C. Habitat Security and Human-Bear Conflict

8. Undertake and report a rigorous geospatial analysis of habitat security for grizzly bears for the comprehensive study area. Use the spatial intersection of habitat security and biophysical habitat suitability to define productive source, production sink, unproductive source, and unproductive sink areas for the comprehensive study area.
9. Geospatially delineate management areas (Bear Management Units) that provide a rational basis for managing grizzly bear habitat security and productivity at the scale of bear home ranges for the comprehensive study area.
10. Undertake and report a rigorous rather than *pro forma* geospatial analysis of likely causes of grizzly bear mortality and human-bear conflict in the comprehensive study area.
11. Assess and report measures that could prevent or mitigate grizzly bear mortality and human-bear conflict differentiated by relevant jurisdictions, relative importance, and comparative efficacy.

12. Report on how these measures would be authoritatively implemented and enforced, and by which entities, for different alternatives.

D. Translocation and Natural Colonization

13. Undertake and report a rigorous analysis of infrastructure needed to facilitate movement of grizzly bears across heavily trafficked highways between the BE and NCDE, GYE, and CYE.
14. Undertake and report a rigorous analysis of time-specific likelihoods that female grizzly bears will naturally colonize the BE.
15. Undertake a rigorous analysis of prospective success rates for translocating grizzly bears to the BE reported in terms of time-specific likelihoods for both survival and reproduction.
16. Assess how prospective removal of ESA protections for either or both the NCDE and GYE grizzly bear populations would affect likelihood of achieving recovery in the Bitterroot Ecosystem under different alternatives.

E. Social Acceptability and Carrying Capacity

17. Provide a rigorous and defensible conceptualization of social acceptability and social carrying capacity.
18. Provide a defensible rationale for deciding who does and does not have standing in the process of determining social acceptability and social carrying capacity and how those with standing will be involved in making these determinations.
19. Undertake and report a rigorous analysis of human lethality in the comprehensive study area stratified by readily identifiable demographics.
20. Articulate a strategy and methods for engaging with and mitigating the impacts of people comprising comparatively lethal demographics.

F. Governance

21. Specify and justify the authoritative and advisory governance structure for different alternatives.

G. Adaptive Management

22. Precisely describe and justify adaptive management if this approach is invoked in any alternative, emphasizing relevant scholarly and scientific literature. Also describe the exact means of implementation for different alternatives.

II. Specific Issue Categories

A. Recovery Area

The U.S. Fish & Wildlife Service must decide the recovery area boundary as part of this EIS process. Several peer-reviewed published analyses (attached) have documented very high quality grizzly bear habitats in all four seasons across large areas outside the politically defined, unscientific 2000 boundary. The 2000 political recovery area boundary would not support a large enough population to assist with grizzly bear recovery across the Northern Rockies.

B. Population Recovery Goal

The USFWS should not set an a priori population recovery goal. Rather, it should assess a broader area of habitat and come up with a range of potential numbers.

C. Connectivity Areas

The U.S. Fish & Wildlife Service must define and analyze connectivity areas between the Bitterroot Ecosystem-NCDE-Cabinet-Yaak and Greater Yellowstone Ecosystems including information from existing published sources. New sources of information relevant to Bitterroot grizzly bear recovery include Bader and Sieracki (2022, denning habitat and secure core in connectivity areas and North BE) and Sells, et al. (2023, predicted connectivity pathways for female and male grizzly bears). A composite of their results within the overlap area are shown below, (Figure 1).

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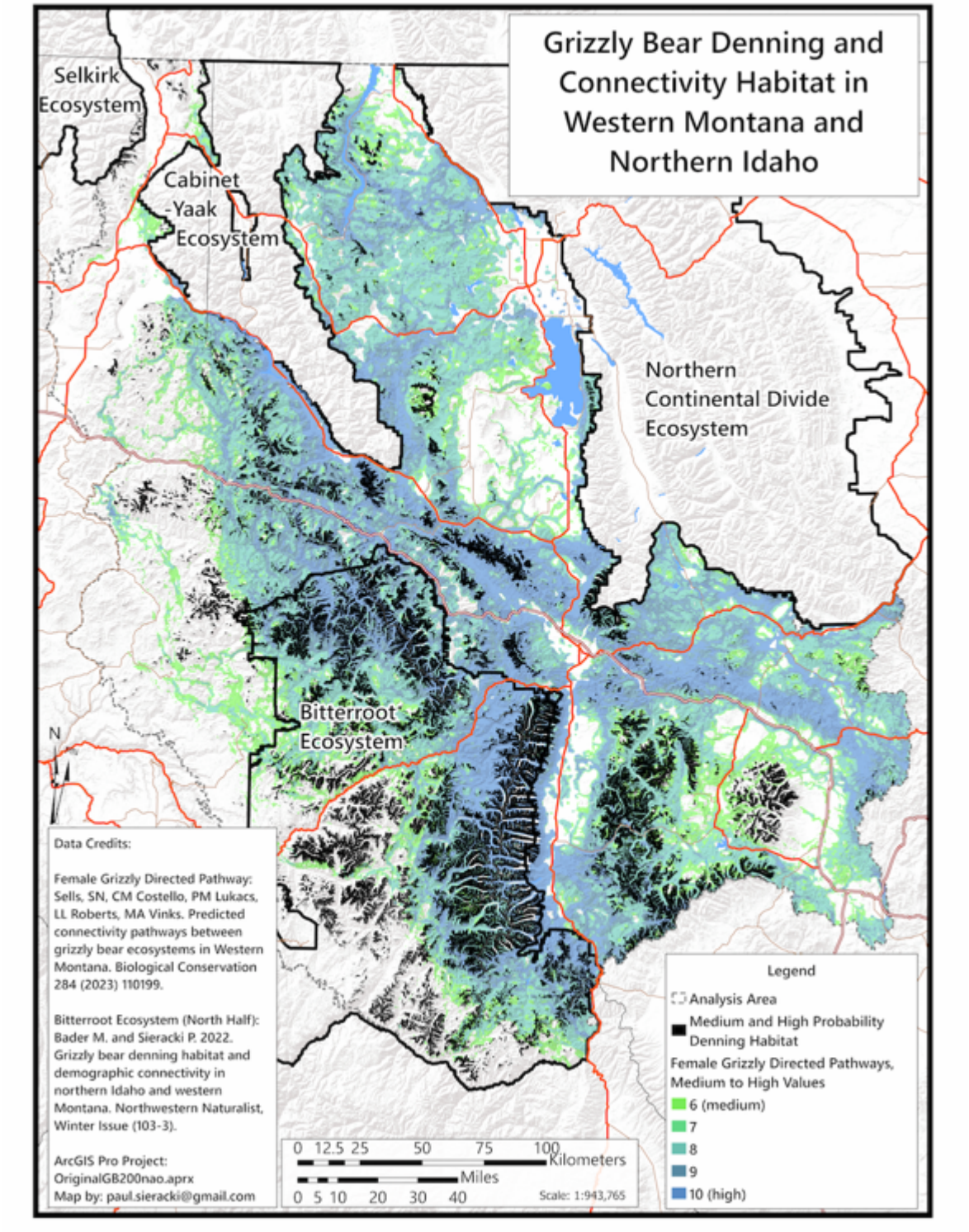
Figure 1. Medium-High Probability Connectivity and Denning Habitat for Grizzly Bears in Western Montana and Northern Idaho.



Good management of existing connectivity areas will be key to the success of grizzly bear recovery in the Bitterroot Ecosystem. Maintaining the present natural function of connectivity would be the most efficient and effective approach to recovering grizzly bears in the BE. When judging regulatory adequacy of connectivity habitat management the degree of application of the guidance below provides a useful yardstick. Such guidance should apply along and across the Continental Divide and adjacent MT/ID Stateline corridors from small miner projects to landscape scales.

The BE Grizzly Bear EIS should include consideration and analysis of the application of guidance excerpted below from the White House Council on Environmental Quality, Guidance for Federal Departments and Agencies on Ecological Connectivity and Wildlife Corridors, March 21, 2023.

> Since connectivity is vital to ecosystem health and functions, it is significant to humans as well and supports the strong cultural and spiritual connections that communities have to nature. (p.1)

To the maximum extent practicable, Federal agencies are expected to advance the objectives of this guidance by developing policies, through regulations, guidance, or other means, to consider how to conserve, enhance, protect, and restore corridors and connectivity during planning and decision-making, and to encourage collaborative processes across management and ownership boundaries. (p.2)

Examples of focal areas where connectivity and corridors should be considered early in planning, funding, and decision-making include, but are not limited to:

> Hard rock mining and mineral exploration and development planning and permitting. (p.4) It is important to consider how connectivity and corridors can be promoted early in planning processes… (p.5)
>
> Best Practices: Agencies should seek to incorporate these best practices into planning and decision-making as they take steps to advance the objectives of this guidance:
>
> - Elevating the conservation, enhancement, protection, and restoration of connectivity and corridors as a programmatic goal.
> - Planning at the scale of landscapes, waterscapes, or seascapes rather than at the scale of an individual project.
> - Applying ecosystem-based conservation, enhancement, protection, and restoration strategies, including using nature-based solutions.

> Avoiding or minimizing adverse impacts that would fragment habitat identified as a priority for connectivity or corridors, and where not possible, offsetting or compensating for these impacts.
>
> Rehabilitating habitat damaged by natural or human impacts to facilitate continued Connectivity.
>
> Baseline information: Federal agencies should appropriately assess the public lands and waters they manage for connectivity and corridors values. Agencies should then incorporate consideration of connectivity and corridors into the guidance for planning, siting, operation, and maintenance of Federal investments, including renewable energy development and infrastructure. (p.6)
>
> During the review of major Federal actions under the National Environmental Policy Act of 1969, 42 U.S.C. § 4331 et seq., (NEPA), agencies should consider and be transparent about the positive or negative impacts of proposed actions and alternatives on connectivity and corridors. Through the NEPA review process, Federal agencies can consider measures to advance corridors and connectivity as components of proposed actions, alternatives to proposed actions, or mitigation for proposed actions' effects. (p.7)

Connectivity areas are essential to the eventual recovery of grizzly bears in the Bitterroot Ecosystem (BE). Functional connectivity is being verified and mapped by grizzly bears. Recent verified grizzly bear occurrences are approaching a corridor of wildlands along the Continental Divide and adjacent MT/ID Stateline connecting the West Big Hole and Sapphire Mountains to the BE. This corridor is the main mostly wildland corridor into the BE south of the Lolo Ninemile DCA. Multiple verified grizzly occurrences have this region been verified in this connectivity area, (Figure 2).

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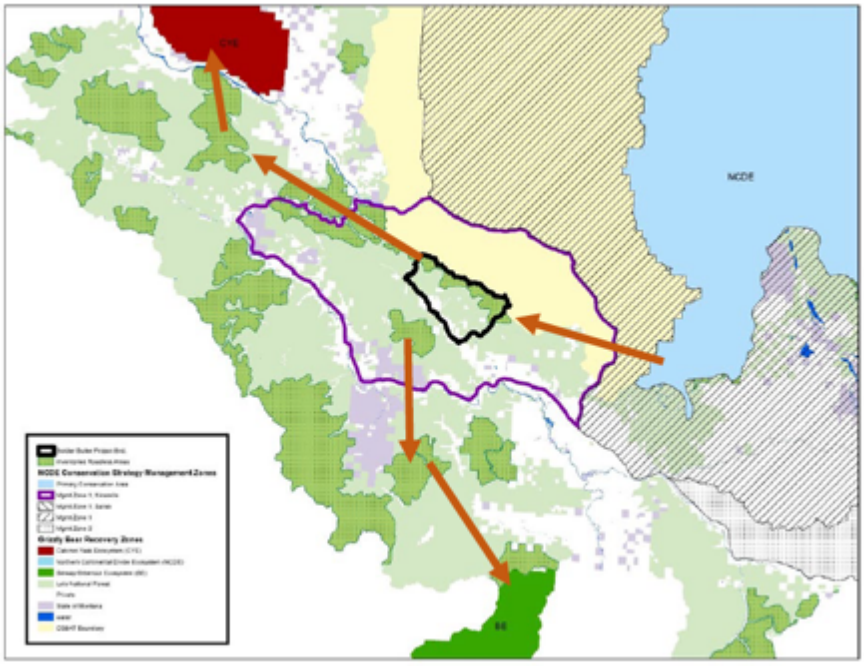
Figure 2. Movement Routes for Grizzly Bears Between NCDE, BE and CYE. Lolo National Forest Map.



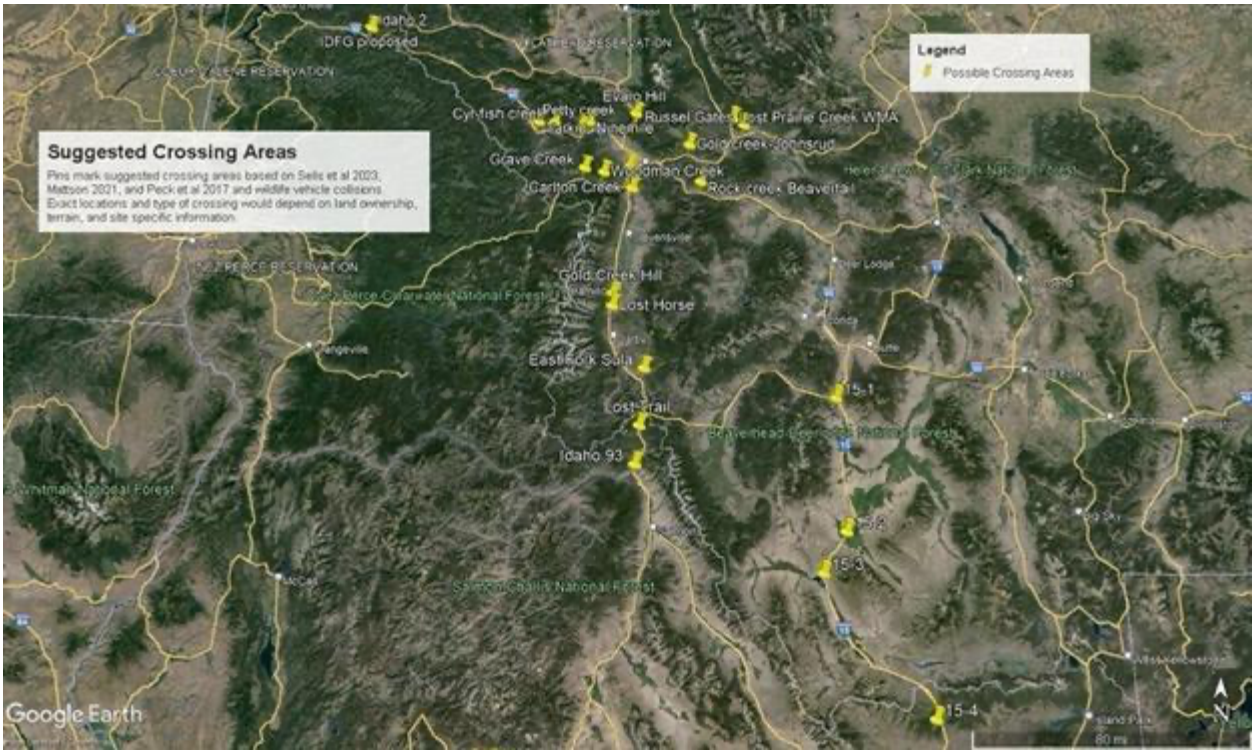
D. Wildlife Crossing Infrastructure

Grizzly bear occupation of the Bitterroot Ecosystem (BE) is within reach. The USFWS Species Status Assessment (SSA) 2022 found "multiple verified sightings that have occurred in linkage zones close to the BE and the current estimated distribution for the NCDE grizzly bear population is less than 5 km (3 mi) to the northeast of the BE recovery zone boundary (p 72)." Newmark et al. 2023 found, "Restoration of habitat**, including the elimination of barriers to animal movement,** can result in an increase in population size due to an expansion of habitat, and allows species to recolonize formerly occupied habitat remnants, and individuals to genetically and demographically rescue declining populations. (Emphasis added. p 2)."

Occupation in the BE and ease of movement from the BE to other recovery areas achieves the genetic connectivity essential to grizzly bear recovery. The need for facilitated movement between recovery areas is amplified through the lens of climate change. CEQ guidance 2023 states, "Connectivity promotes climate adaptation and resilience by enabling wildlife to adapt, disperse, and adjust to changes in the quality and distribution of habitats, including climate-driven shifts in species' geographic ranges (p 1)." The EIS must include full analysis and disclosure of wildlife infrastructure needed to facilitate grizzly bear movement between the BE, the NCDE, the CYE, and the GYE.

The crossing locations shown in the enclosed kmz file[1] and Figure 3 are suggested crossing areas based on grizzly bear movement and potential distribution analyzed in Sells et al. 2023, Mattson 2021, and Peck et al. 2017. Wildlife vehicle collisions data in Paul et al. 2023 was also considered. Site specific analysis of infrastructure feasibility, terrain, and land ownership is necessary to determine more specific locations. There are a few suggested crossing areas in Idaho; however, there is a lack of thorough analysis of wildlife corridors in Idaho, more information is necessary.

Figure 3. Suggested Crossing Areas for Grizzly Bear Movement Into the Bitterroot Ecosystem.



Peck et al. 2017, Mattson 2021. and Sells et al. 2023 analyzed grizzly bear movement between recovery areas. See Figures 4 and 5. These movement corridors should be used to analyze the suggested crossing areas and determine other areas that would facilitate movement from to the BE from the NCDE, the CYE, and the GYE.

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[1] See Final Wildlife Connectivity Crossings for BE.kmz

Figure 4. Grizzly Distribution and Movement, Mattson (2021).

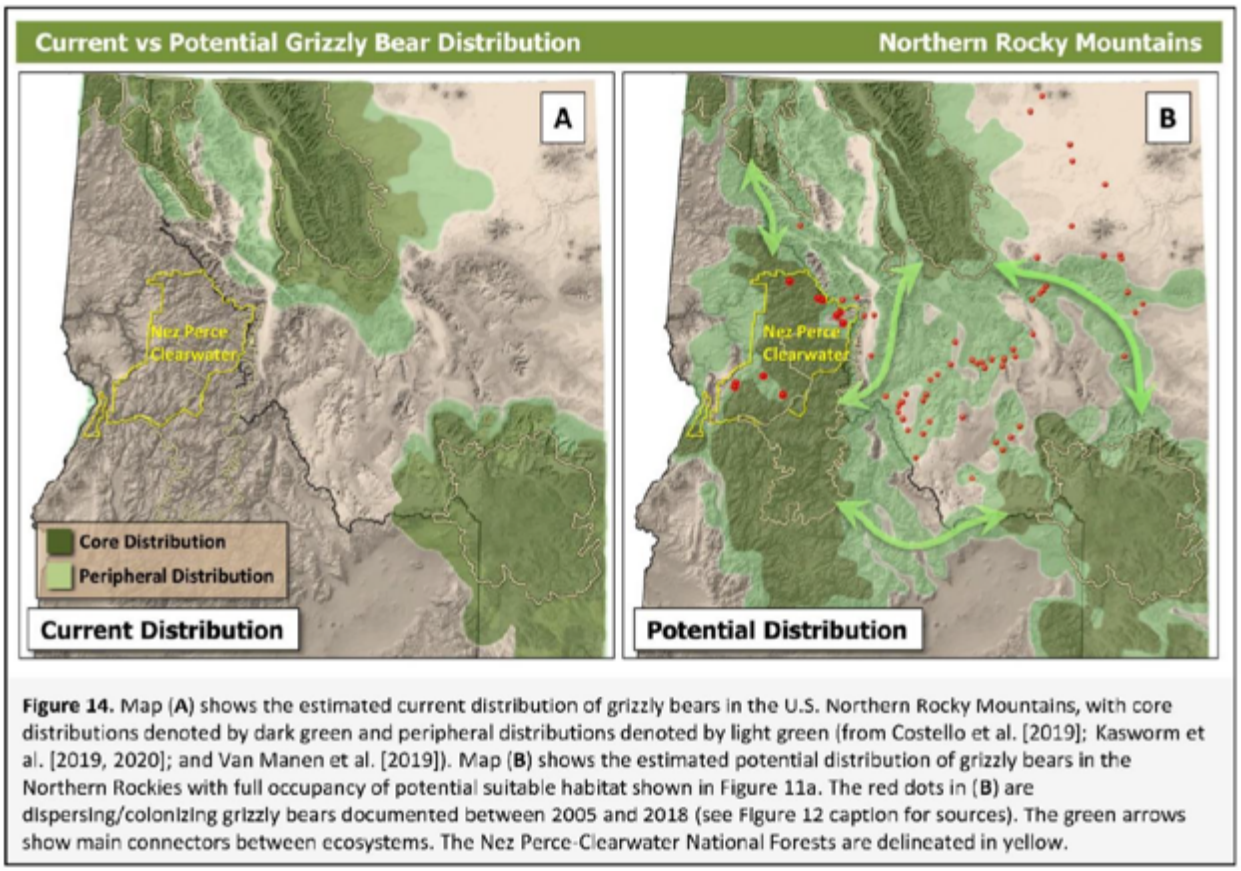

Figure 14. Map (**A**) shows the estimated current distribution of grizzly bears in the U.S. Northern Rocky Mountains, with core distributions denoted by dark green and peripheral distributions denoted by light green (from Costello et al. [2019]; Kasworm et al. [2019, 2020]; and Van Manen et al. [2019]). Map (**B**) shows the estimated potential distribution of grizzly bears in the Northern Rockies with full occupancy of potential suitable habitat shown in Figure 11a. The red dots in (**B**) are dispersing/colonizing grizzly bears documented between 2005 and 2018 (see Figure 12 caption for sources). The green arrows show main connectors between ecosystems. The Nez Perce-Clearwater National Forests are delineated in yellow.

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Figure 5. Sells, et al. (2023) Predicted Grizzly Bear Movement Areas.

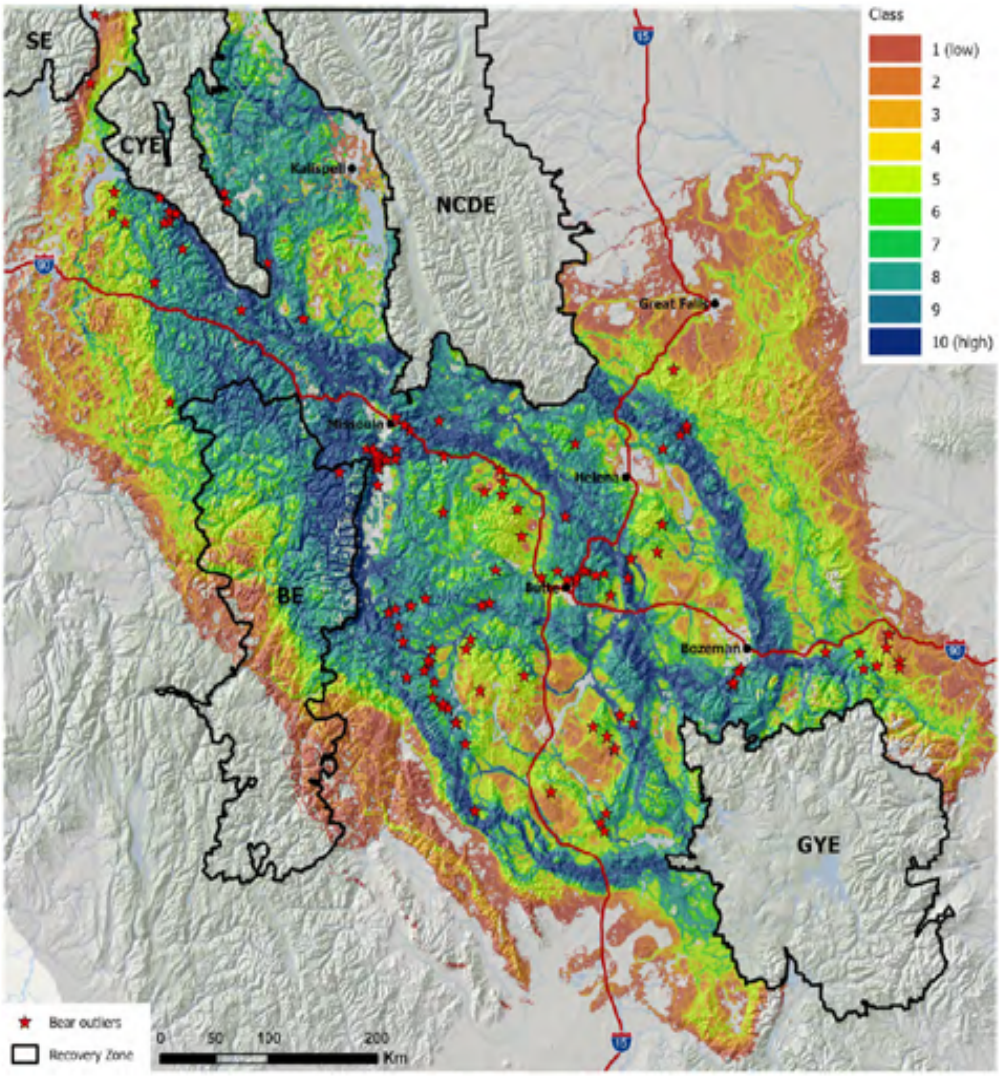


Fig. 3. Prediction of female grizzly bear connectivity pathways in western Montana, summarized from 5 sets of directed (randomized shortest path) movement simulations using start and end nodes associated with routes of NCDE-CYE, NCDE-BE, NCDE-GYE, CYE-BE, and GYE-BE (Fig. 1). Class 1 = lowest relative predicted use, whereas class 10 = highest relative predicted use. Simulations were based on 46 individual iSSFs for NCDE females. These simulations employed the lowest θ value of 0.0001, which resulted in the highest correlation with independent grizzly bear outlier observations (Table 1). Results from other θ values shown in the Appendix.

The United States Department of Transportation (USDOT) also recognizes the importance of wildlife crossing structures for biodiversity in a changing climate, "Like landscape corridors, the conservation value of wildlife crossing structures are gaining attention as applied measures to help adapt changes in species ranges and animal distributions to climate change." USDOT created guidance that should be considered in their Wildlife Crossing Structure Handbook (https://www.fhwa.dot.gov/clas/ctip/wildlife_crossing_structures/ch_1.aspx#).

Wildlife crossings have strong social support. A recent Colorado College Poll found 78% of voters in the Western states think, "More emphasis should be placed on conserving wildlife migration routes, providing crossings over or under highways and limiting new development in

those areas (p 1).” 60% of the funds for the multi-million dollar Wallis Annenberg Wildlife Crossing in California are coming from private donations (see Figure 6).

Figure 6. Rendering of Wallis Annenberg Wildlife Crossing over Highway 101, California.

This rendering shows the 101 Freeway wildlife crossing planned for near Los Angeles. Credit: National Wildlife Federation

Considering CEQ guidance, the weight of available science, and social support of wildlife crossings, the EIS must complete and disclose a thorough analysis of wildlife crossing infrastructure to aid grizzly bears in a changing climate and to facilitate movement into the BE.

E. Roadless Areas and Secure Core

The U.S. Fish & Wildlife Service must identify and quantify roadless areas and secure core habitat within the analysis area and identify its role in grizzly bear habitat conservation and demographics, population growth and reduction of mortality risk.

F. Habitat Studies

The U.S. Fish & Wildlife Service must consider habitat studies fully published since the 2000 FEIS that include areas outside the 2000 recovery area. These include the attached publications that were not included in the 2000 FEIS and those officially published after the 2000 FEIS: Merrill et al., 1999 (shown below); Carroll et al., 2001 (excerpt shown below); Hogg et al., 2001 (one map shown below); Boyce and Waller (2003); Mowat et al. (2013); Mattson (2021); Bader and Sieracki (2022); Sells, et al. (2023).

The USFWS must also calculate total motorized route density and total road density for the analysis area. It must also analyze and disclose the impacts that roads have on grizzly bears and their habitat. Roads are associated with high rates of grizzly bear mortality and displacement from key habitats as established in many reports including McLellan (2015), Proctor et al. (2019, 2023), Boulanger and Stenhouse (2014), Pigeon et al. (2014). These impacts last after roads are closed to motorized use. Grizzly bears avoid roads, and they "may not choose to use these habitats even long after road closures." U.S. Fish & Wildlife Service (2022).

Figure 7. Most Productive Grizzly Bear Habitats in Idaho. Merrill et al. 1999.

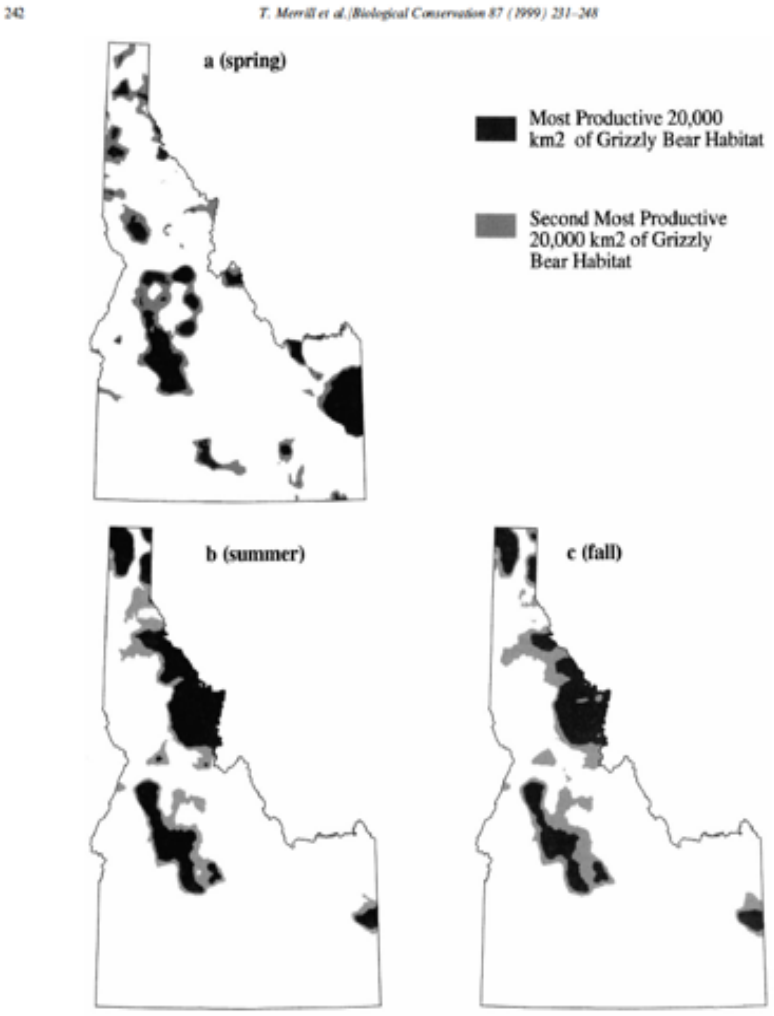
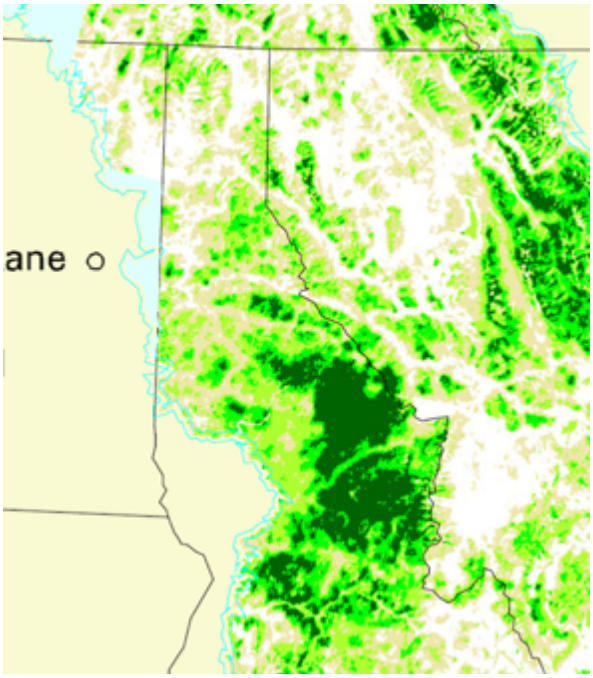


Fig. 9. Distribution of productive grizzly bear habitat in Idaho during (a) spring, (b) summer, and (c) fall, distinguished by being, successively, the most productive 20,000 and 40,000 km^2 for each season.

Figure 8. The Most Productive Habitats for Grizzly Bear With Darker Green Representing the Highest Quality. Carroll et al.



2001.

Figure 9. Percent Coverage of Plants That Produce Berries that are of Primary Importance to Grizzly Bears in Other Ecosystems. (Hogg, et al. 2001).

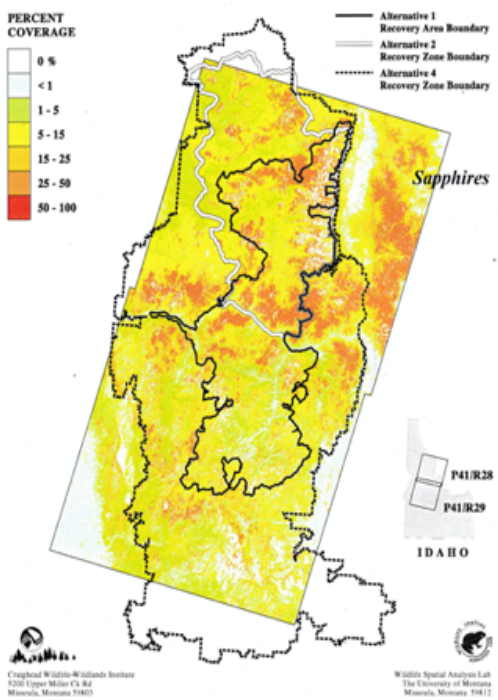


Figure 6-16. For the Salmon-Selway Ecosystem, estimated percent coverage of plants that produce berries reported to be of primary importance to grizzly bears in other ecosystems.

G. Sanitation

Lack of sanitation measures that provide wildlife access to edible refuse and anthropogenic foods can have dire consequences for the recovery of grizzly bears and the possibility of a sustainable population in the Bitterroot Ecosystem (BE). Research has shown that easy access to human foods can increase body fat and female reproduction rates of bears, but a comprehensive, six-year study by Colorado Parks and Wildlife discovered that regardless of these benefits, overall populations declined. Johnson et al. (2020) found, "Our results provide a mechanistic understanding of how black bear use of residential development exerts opposing effects on different bear fitness traits, but an overall negative effect on population growth (p 15)." The proposed Environmental Impact Statement (EIS) must include a thorough analysis of baseline conditions and the effects of sanitation strategies to prevent access to refuse in communities and on public lands.

Sanitation issues are the most prevalent cause of human bear conflicts where bear habitat borders human development. Johnson et al. (2018) found, "The main factor influencing these conflicts is black bears foraging on anthropogenic foods within areas of human development, primarily on residential garbage (Barrett et al. 2014, Lewis et al. 2015) (p 2011)." Parchizadeh et al. (2023) also found that "unsecured human foods and edible garbage are the primary causes of human-black bear conflicts (p 8)."

Grizzly bears are attracted to the same foods as black bears. Black bear conflicts in areas where grizzly bear populations are beginning to establish like the BE, are clear indicators of future grizzly bear conflicts which could be minimized with proactive measures.

Proctor et al. (2018) found that a comprehensive conflict management program that included bear-resistant garbage containers, and deadstock containment was successful in reducing grizzly bear human conflicts.

> Ongoing monitoring has demonstrated that our comprehensive HBC [Human Bear Conflict] program has resulted in a significant reduction in human-caused mortality, increased inter-population connectivity, and improved habitat effectiveness (p 348)." In Durango, Colorado, Johnson found "human-bear conflicts decreased as compliance with the bear-proofing ordinance increased, with reductions in conflict leveling out once 60% of residents complied with the ordinance (Johnson et al. 2018).

Compared to control areas, they found "conflicts were lower in areas that had been given bear-resistant containers, presumably because bear use of these areas had decreased along with the forage benefits (Bar-uch-Mordo et al. 2013) (p 19)." *Id.*

A lack of proper sanitation strategies would discourage grizzly bears from populating the BE and put a wrench in the works of the long term, sustainable recovery of grizzly bears in the lower 48.

Easy access to refuse and the resulting grizzly bear human conflicts will negatively affect population growth, increase mortality, decrease trust and confidence in managing agencies, and foster a lack of tolerance towards grizzly bears.

Foraging in residential developments lures bears closer to roads and increased human activity which makes them vulnerable to human caused mortality. Johnson et al. (2020) found that foraging in residential developments, "exposes [bears] to higher rates of mortality (p 15)." Aune and Kasworm (1989) found that 62.8% of all known human-caused grizzly deaths were found to occur within one kilometer of a road on the Rocky Mountain Front in Montana (p 211). Of those killed, a disproportionate number were females leading to population declines. McClellan (2015), over a 30 year period found 84% of all grizzly bear mortalities occurred < 120 meters from a road. According to Johnson et al. (2020), "Anthropogenic food subsidies not only alter the behavior of bears (Baruch-Mordo et al. 2014; Johnson et al. 2015, 2018) but can result in increased human caused bear mortality and reduced population growth rates (Beckmann and Berger 2003, Hostetler et al. 2009, Baruch-Mordo et al. 2014) (p 1102)." Johnson et al. (2015) also found that, "increased bear use of residential development induced population declines (p 15)."

Human development around the BE has increased greatly. From 2010-2022, USA Facts reports monumental increases in populations of neighboring residential areas. Ravalli County increased by 17.3% while Missoula and Beaverhead Counties increased by 10.6% and 5% respectively in Montana. In Idaho, the counties of Idaho, Clearwater, and Lemhi increased by 7.9%, 3.3% and 3.6%.[2] Human development is increasing in proximity to the BE and will continue to do so. Inevitably, the amount of edible refuse available to bears will continuously increase in the area. Moreover, visitation by out of region residents has also increased. The effects of a comprehensive sanitation program to secure refuse in communities, at transfer stations, on public lands, and in recreation areas must be analyzed and disclosed.

Without proper sanitation measures, even a small number of bears in the BE can cause conflicts and promote fear and mistrust, confounding the restoration of grizzly bears. The number of bears is often erroneously associated with the number of conflicts. Lischka et al. (2018) found, "Wildlife managers have often used rates of HWIs [Human Wildlife Interactions] as an indicator of the size of wildlife populations (Morzillo et al. 2014). Consequently, management actions to reduce conflict, such as increased harvest, are frequently aimed at decreasing wildlife population size. Unfortunately, these efforts are rarely successful as conflict rates do not necessarily reflect numerical changes in populations (Treves et al. 2010, Obbard et al. 2014) (p 11)." Even a small number of bears can cause conflicts that create negative attitudes towards wildlife and wildlife

[2] See, https://usafacts.org/data/topics/people-society/population-and-demographics/our-changing-population. Last accessed 3/15/2024.

management. Johnson et al 2020 found conflicts create, “situations where bears cause property damage and threaten human safety (Treves et al. 2010) (p 1102).”

There have also been assumptions that once bears utilize anthropogenic foods, they do not go back to natural food sources. Johnson et al. 2020 found this to be incorrect. “bears appeared to perceive some risk associated with their use of residential development, as they generally reduced this behavior when natural foods were abundant even though human subsidies were consistently available (Johnson et al. 2015) (p 18).” Even when natural foods are scarce, successful sanitation strategies can discourage use of residential areas by reducing food availability. Proctor et al. 1989 found, “We radio-collared and used nonlethal management on potential conflict bears and have a ~75% success rate in that the bear was alive and out of conflict situations over the life of the radio-collar (p 348).”

Venumi`ere-Lefebvre et al. 2022 found, “Conservation professionals have identified fear of carnivores and mistrust between decision-makers and local communities as leading causes of conflict between humans and carnivores (Lute et al., 2018) (p 9).” But research has shown that comprehensive strategies that include sanitation conflict mitigation measures not only reduce conflict but that also improve attitudes towards and increase trust in wildlife management agencies. Johnson et al. 2018 found “public mail surveys demonstrated that the deployment of bear-resistant containers was associated with increases in the perceived quality of bear management and support for ordinances that require bear-proofing, and declines in the perceived risk of future trash-related conflicts (p 1102).” Barrett et al. 2014 came to the same conclusion. “The FWC used telephone surveys in 2 Florida communities to evaluate the effectiveness of using 2 types of bear-resistant trash cans. Surveys revealed a significant reduction in the number of bears consuming garbage and of other human bear interactions over a 1-year period and, consequently, a positive attitude from residents toward using these trash cans.”

Sanitation measures as part of a comprehensive conflict management program will improve the public perception of grizzly bears, conflict mitigation measures, and management agencies. Johnson et al. 2018 found, “Our results validate efforts by wildlife professionals and municipalities to reduce black bear access to human foods and should encourage other entities of the merits of bear-proofing efforts for reducing human-bear conflicts and improving public attitudes about bears and their management (p 1102).” Fostering trust in management agencies and increasing positive perceptions of grizzly bears will positively affect the restoration of grizzly bears in the BE.

Analysis of sanitation issues in the EIS must include a comprehensive survey of baseline conditions of current conflicts, current education and outreach measures, bear resistant infrastructure, food storage orders, bear resistant standards for outfitters, and the use of best practices for carcass management while hunting.

Baseline conditions must establish the existence of functioning bear resistant infrastructure available on National, State, and local public lands? For example, the Bitterroot National Forest (BNF) received bear resistant infrastructure for camping and picnic areas through a grant two years ago. That infrastructure has yet to be installed. At this time, the BNF does not have food storage orders or backcountry outfitter requirements for bear resistant practices except in the Anaconda-Pintler Wilderness portion of the forest. In 2018, sporadic signage was posted on trailheads explaining how to identify grizzly bears and explaining that food storage orders may be in place (see Figures 10 and 11).

Figure 10. Know Your Bears Sign at Bitterroot National Forest Trailhead.

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Figure 11. Storage Order May Be in Place Sign. Bitterroot National Forest.

Baseline conditions of local sanitation measures must also be established. At this time, Ravalli County does not have any ordinances in place to mandate the use of bear resistant containers. Bear resistant refuse containers are available from the local disposal company at an increased cost of $3.00 a month. Other local groups are working to educate the public and reduce conflicts like in the Blackfoot, but few are as successful and all struggle with funding. The Teller Wildlife Refuge has bear infrastructure thanks to a student project at Corvallis High School. The Como Lake recreation area has bear resistant dumpsters but they are currently non-functional. Missoula County and City have created and expanded a bear buffer zone and require bear resistant containers for residents within the buffer zones. Beaverhead county has no ordinances in place. The Lolo National Forest and the Beaverhead-Deerlodge forests have food storage orders in place. How often are they enforced or monitored?

The public (and private) lands in Idaho may have even more serious problems than those in Montana. With the exception of the Sawtooth National Recreation Area (Order Number: 0414-04-143), there are no food storage orders for the national forests, or parts of national forests, that would be in the Bitterroot Ecosystem or any conceivable revised recovery area boundary. There are food storage orders for the Selkirk and Cabinet-Yaak Ecosystems portions of the Idaho Panhandle National Forests (Order Number: F-11-002) and for the Greater Yellowstone Ecosystem portions of of the Caribou-Targhee National Forest, including the Centennials (Order

Number: 04-15-117). Counties have problems with open dumpsters within the external boundaries of the national forests.

Around the time of the 2000 FEIS and 2001 ROD for grizzly recovery in the Bitterroot Ecosystem, there was an effort to provide for educational materials and bear-proof dumpsters in areas surrounding the new recovery area boundary (which incidentally excluded crucial habitat and connective habitat). The attached report by Friends of the Clearwater, which was provided to the US Fish and Wildlife Service a few years ago, shows how nearly all of the bear-proof dumpsters in the Nez Perce and Clearwater National Forests have fallen into disrepair. The report also documents gaps in educational signage at trailheads and campgrounds and serious problems with overflowing private dumpsters with the boundaries of the two national forests—dumpsters which never were bear-proof.

The other big problem in Idaho is bear-baiting, which is prevalent throughout the recovery area and surrounding lands. It can negate the effects of proper sanitation. An accounting of all bear-baiting sites needs to be made. The Idaho Department of Fish and Game is supposed to keep track of those sites. Further, many sites are out of compliance with state policy in terms of being permanent, rather than removed after baiting season.

Current baselines for all counties and forests surrounding the Recovery Area and in Connectivity areas must be surveyed and established in this EIS process. Accurate baseline conditions will allow the USFWS to monitor efficacy of infrastructure and conflict mitigation as well as ongoing effects to grizzly bear restoration and movement.

Sanitation Issues to be Considered

USFWS must provide direction and promote consistency concerning sanitation issues on public and private lands in and around the Bitterroot Recovery Area and Connectivity Areas.
This would include the following recommendations:

- Local governments should develop consistent sanitation ordinances in cooperation with local sanitation companies that require attractants to be stored in a bear-resistant manner and include entities for enforcement.
- Local governments and refuse managers should secure transfer stations in a bear-resistant manner.
- USFWS should hire 2 FTEs to work with the public on sanitation issues and education. Initially, one could be located in Montana and one in Idaho.
- Agencies, local governments, railroad companies, and highway departments should implement systems for the removal and bear-resistant disposal of animal carcasses on roadways and railways.
- Relevant agencies should develop consistent backcountry bear-resistant sanitation measures and enforcement in Region1 and areas of Region 4
- Relevant agencies and local governments should make bear-resistant infrastructure available at all federal, state, and local campgrounds and public recreation areas.
- All sanitation efforts should be coupled with outreach, monitoring, and maintenance of infrastructure as well as enforcement measures.
- Sanitation efforts should not be stand alone, they should be part of a comprehensive conflict mitigation strategy.
- Relevant agencies should encourage and assist in the establishment of local citizen working groups to develop comprehensive conflict mitigation strategies.

H. Conflict Minimization

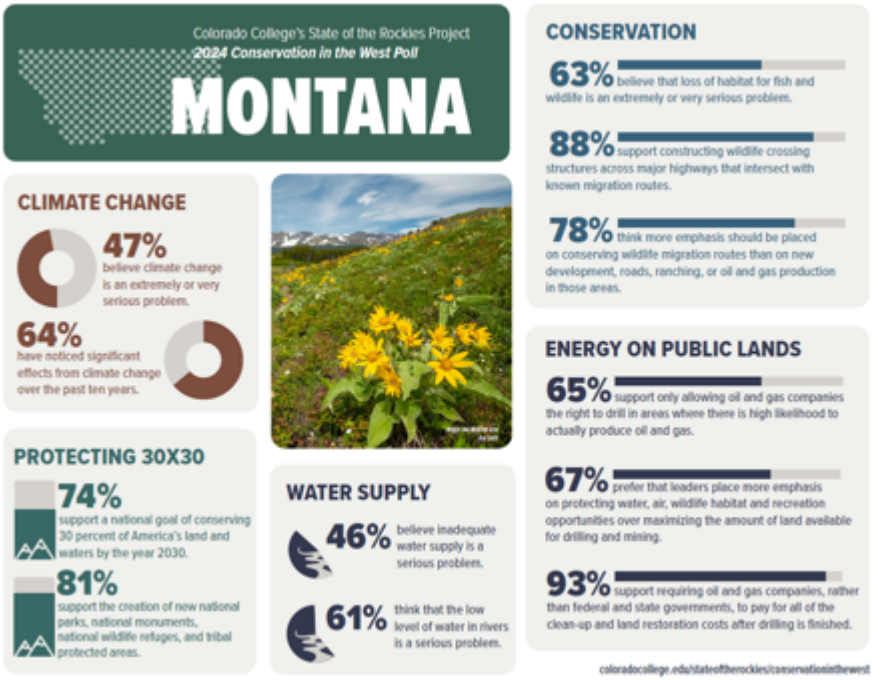
Comprehensive conflict mitigation strategies can prevent grizzly bear mortalities, facilitate connectivity, and increase social acceptance of the iconic carnivores. These measures must be assessed and evaluated thoroughly in the EIS.

Coexistence measures benefit both humans and wildlife. The Whitehouse's *Nature-based Solutions: Roadmap* finds that "to build, restore, live and work in concert with nature will lead to

significant benefits for both people and the planet (p 4).” The Council on Environmental Quality (CEQ) guidance on connectivity states, “Maintaining connected habitats also can help sustain ecosystem services (i.e., benefits that flow from nature to people), such as flood risk reduction, extreme heat mitigation, health and public safety, access to nature, hunting and fishing, livelihoods, and subsistence (p 1).” The CEQ created the guidance “to strengthen on-the-ground efforts on connectivity and corridors to produce benefits for wildlife and human communities alike (ibid p 11).”

Current social science indicates that wildlife, and native carnivores in particular, are highly valued by society. Venumière-Lefebvre found “the four most studied species in coexistence research (gray wolves, leopards, lions, and brown bears) were all listed among the 20 most charismatic species, based on public surveys and depictions of carnivores in media (Albert et al., 2018; Arbieu et al., 2019) (p 8).” The Grizzly Bear Management Report for the NCDE, Region 1 found, “tolerance for grizzly bears has improved” and residents in grizzly country “expect bears to be around and have learned or are learning how to coexist.” In fact, according to Colorado College’s 2024 Conservation in the West Poll, 78% of Montanans think, “more emphasis should be placed on conserving wildlife migration routes than on new development, roads, ranching, or oil and gas production in those areas (see Figure 13).”

Figure 13. Colorado College 2024 Conservation in the West Poll.



Manfredo et al. 2021 also discovered a trend towards increased tolerance of wildlife in the West from 2004-2018, “Findings confirmed an increased endorsement of mutualism values (seeing wildlife as part of one’s social community and deserving of rights like humans) accompanied by

a decline in values emphasizing domination (treating wildlife as resources to be used for human benefit) (p 1).” In Montana, Idaho, and Wyoming, the percentage of mutualists increased by 5.4%, 5.9%, and 3.3% respectively (ibid, p 4).

Governor Bullock’s Grizzly Bear Council Recommendations state, “relevant agencies should strive to cultivate social tolerance through sound management decisions and conflict prevention measures (p 6).” Proctor et al. 2018 found, “Beyond the immediacy of the conflicts themselves, long-term conflicts can impact the conservation of wildlife species, resulting in population decline, range contraction, and loss of inter-population connectivity (Distefano 2005) (p 348).” Comprehensive mitigation strategies to reduce human bear conflicts will augment an already increasing social tolerance for grizzly bears and support grizzly bear recovery. Johnson et al. 2018 found, “Attitudes in treatment areas toward management generally became more positive after bear-resistant containers were deployed. During the pre-treatment survey, satisfaction with management was similar among treatment and control areas, but during the post-treatment survey, treatment areas reported higher levels of satisfaction (p 1108).”

Comprehensive human bear conflict mitigation strategies with public involvement, enforcement, and funding must be included in all alternatives. Strategies must include public involvement in design, implementation, and monitoring. Treves et al. 2006 states, “Incorporating local stakeholders as partners in planning and implementation can help to win space for wildlife beyond protected area boundaries. (p 383).”

Strategies must be comprehensive. Both Proctor et al. 2018 and Parchizadeh et al. 2023 used comprehensive, varied approaches to conflict mitigation with participation from local communities. Both were successful at reducing conflicts and increasing social tolerance. Proctor et al found, “Our program to reduce HBCs primarily included strategic private lands purchased to reduce human density in wildlife corridors, the reduction of bear attractants where human settlement and agriculture exists, and the nonlethal management of conflict bears. Attractant management strategies encompassed public education, cost-share electric fencing, bear-resistant garbage containers, and deadstock containment. We taught bear safety courses and bear spray training to increase tolerance and give people tools to avoid negative encounters with bears (p 348).” And Parchizadeh et al. emphasize, “Reducing black bear access to anthropogenic foods and other attractants, non-lethal measures including electric fencing, modifying placement or configuration of field crops, and bear-resistant waste management should be used consistently and comprehensively in communities to reduce conflicts and facilitate coexistence between humans and bears (p 8).”

Strategies must include long term funding and mechanisms of enforcement. Johnson et al 2018 found “Compliance had a strong nonlinear effect on conflict rates, such that the probability of conflict sharply declined as compliance increased to approximately 0.60 (p 1108).” And Proctor

found that efforts must continue over time, “These efforts will need to continue and likely intensify to try and maintain area residents' tolerance and acceptance of grizzly bears (p 367).”

The EIS must analyze and disclose baseline conditions in and around the BE including black bear conflicts, availability of natural foods, and accessibility of anthropogenic foods. Treves et al. found, “Collecting baseline information is a vital first step in managing HWC [human bear conflicts] because understanding the timing and locations of conflicts, as well as the behaviors of the involved individuals (wildlife and human) is essential to planning (p 386).”

The EIS must rigorously analyze and disclose the effects of a comprehensive conflict mitigation that include but are not limited to the following: more bear specialists, bear resistant refuse containers, railroad grain spill prevention and clean up, carcass removal along roads, railways, and ranches, electric fencing, range riders, bear smart communities, education and outreach, bear spray training, safe hunting practices, land preservation, and local participation in planning, implementation and monitoring.

I. Livestock Grazing

The EIS must analyze the multifaceted impacts of livestock grazing on the future of grizzly bears in the Bitterroot Ecosystem (BE). More specifically, the EIS must consider and analyze alternatives that evaluate the reduction or elimination of livestock grazing in federally managed grizzly bear habitat and, for areas where livestock grazing will occur, the EIS must analyze and consider the proactive incorporation of non-lethal conflict reduction measures into federal grazing permits. Given that livestock conflict continues to be a leading cause of grizzly bear mortality in the adjacent Greater Yellowstone Ecosystem (GYE), proactively incorporating these measures into any future plan for the BE is essential to the return of a healthy, self-sustaining grizzly bear population.

In particular, the EIS must address and substantively analyze the following issues regarding livestock grazing and grizzly bears:

- the overlapping ecological niches occupied by livestock and grizzly bears and the impacts of livestock grazing on the availability of food for grizzly bears;
- the potential for climatic change and species-specific changes to affect the diet of grizzly bears and to create potential conflicts with livestock;
- the changing nature of grizzly bear depredation on cattle during the last twenty years, with the attendant implications for forecasting risk and impacts for grizzly bears;
- the sex-age composition of grizzly bears involved in depredation events and the demographic consequences of lethal management on the population of grizzly bears more broadly; and
- the full range of possible responses to livestock depredation, most notably non-lethal

conflict reduction measures and the retirement and/or closure of livestock grazing allotments.

Much of the following discussion incorporates evidence from studies of grizzly bears in the GYE. This research is indicative more generally and must be considered in the EIS given the amount and quality of research into grizzlies that researchers have conducted in the GYE for over five decades, the proximity of the GYE to the BE, the similarities between the two ecosystems, and the potential for bears from the GYE to populate the BE in the coming years.

The EIS Must Analyze the Ecological Conflicts between Livestock and Grizzly Bears

First, the EIS must analyze the overlap in the ecological niches occupied by livestock and grizzly bears and the threat this overlap poses to grizzly bears. Grizzly bears eat copious amounts of the same grasses, sedges, and forbs consumed by cattle even as the energetic benefits of this grazing are unclear (Mealey 1975, Mattson et al. 1991a, Mattson 2000, Mattson et al. 2004). Moreover, grizzly bear exploitation of herbaceous foods is highly sensitive to the density and structure of plants and thus likely to be affected by even modest levels of utilization by cattle (Rode et al. 2001). Cattle grazing can also have negative effects on bear foods, such as the abundance of species like cow-parsnip, with these effects aggravated by cattle grazing in the month of June (Mealey et al. 1977; Irwin & Hammond 1985; Stivers 1988).

Not all bear foods are, in fact, equal. Animals, including vertebrates and insects, are not only 2-4 times more digestible by bears compared to vegetal foods, but also richer in fat and protein. Among the vegetal foods, roots and fruits are more digestible than foliage and offer higher concentrations of starch and sugar (Mattson et al. 2004).

These differences in food quality together with landscape-level differences in food quantity and distribution unambiguously affect the fitness, physical condition, and survival of bears (Hilderbrand et al. 1999; Rode & Robbins 2000; Felicetti et al. 2003a; Haroldson et al. 2006; Robbins et al. 2007; Erlenbach et al. 2014; López-Alfaro et al. 2015; McLellan 2015; Hertel et al. 2018; Hilderbrand et al. 2018). Cumulatively, these demographic and physiological processes manifest in orders-of-magnitude differences in grizzly bear densities that reflect diets and overall habitat productivity (Mowat et al. 2013).

Although bears are omnivores they are not indifferent to the quality and quantity of available foods. Bears efficiently select diets that optimize energetic gain and intake of seasonally important nutrients while minimizing exposure to perceived risk (Reinhart & Mattson 1990; Mattson 1997a, 2000, 2001, 2002, 2004; Welch et al. 1997; Rode et al. 2001; Mattson et al. 2002; Ben-David et al. 2004; Gende & Quinn 2004; Quinn et al. 2017; Lincoln & Quinn 2019). A handful of high-quality foods consequently dominate the seasonal diets of bears, with exact dietary composition depending on seasonal and regional availability of foods. Among many such

examples, huckleberries dominate bear diets in southeast British Columbia and northwest Montana (Proctor et al. 2023); buffaloberries and hedysarum roots dominate diets of bears in Alberta (Munro et al. 2006); and spawning salmonids dominate diets of bears in coastal Alaska (Mowat & Heard 2006).

Differences among foods arise from characteristic densities and architectures at foraging sites, the energetic expenses of extraction, and per gram densities of energy and nutrients—and how all of this varies seasonally and annually (Mattson et al. 2004). Population density, as such, is not a mechanism that directly limits population growth (Krebs 1995, 2002). Instead, nearly all effects of conspecific density are mediated through competition for shared foods, natural mortality caused by starvation or conspecific predation, increases in vulnerability to predators (e.g., humans) caused by conspecific displacement, and interactions of all with carrying capacity, which axiomatically varies in time and space.

Second, regarding the possibility for conflict with livestock grazing, the EIS must address the potentially substantial importance of meat from vertebrates in grizzly bear diets, the magnitude and contingencies of predation by grizzlies on ungulates of all species, and the relevance of these phenomena to potential depredation of cow-calves within the BE.

Tissue from large hooved herbivores (i.e., ungulates) is a primary source of energy and nutrients for bears in many ecosystems, especially in colder, less productive, or more open regions where meat accounts for between 50-80% of assimilated nutrients (Jacoby et al. 1999; Mowat & Heard 2006; Vulla et al. 2009; Bojarska & Selva 2012; Milakovic & Parker 2013; Niedziałkowska et al. 2019). In most regions, brown and grizzly bears obtain almost all this meat from native ungulates, whereas in some areas, such as along Montana's Rocky Mountain Front, livestock are the primary source (Aune & Kasworm 1989). Consumption of fat- and protein-rich animal tissue by bears is primarily constrained only by availability and the need to balance nutrients (Rode & Robbins 2000; Robbins et al. 2007; Erlenbach et al. 2014; Nielsen et al. 2017).

Much of the meat obtained from ungulates during late spring and early summer comes from preying on calves, with bear predation often taking a heavy toll on survival and recruitment of moose, elk, caribou, and muskox calves (Ballard et al. 1981, 1991; Larsen et al. 1989; Adams et al. 1995; Bertram & Vivion 2002; Arthur & Del Vecchio 2017; Brockman et al. 2017). Even so, grizzly bears will prey on vulnerable animals of any size during any season, including adult moose and elk (Cole 1972; Ballard et al. 1981; Schleyer 1983; Craighead et al. 1995; Mattson 1997b; Reynolds et al. 2002; Kermish-Wells et al. 2018). Predatory bears clearly optimize to maximize reward while minimizing risk, with vulnerability arising from several factors, including small size, docile or inattentive conspecifics, lack of vigor, or lack of agility.

Male brown and grizzly bears consistently eat more meat than conspecifics or sympatric black

bears (Mattson 1997b, 2000; Hilderbrand et al. 1999b; McLellan 2011; Milakovic & Parker 2013; Schwartz et al. 2014). Even so, diets of male and female grizzlies converge on consuming substantial amounts of meat if alternate high-quality foods are not available (Mattson 1997b; Schwartz et al. 2014). Aside from differences attributable to sex and age, some bears clearly become more proficient than others at preying on larger ungulates such as adult elk and moose weakened by winter weather or the fall rut (Gunn & Miller 1982; Schleyer 1983; Reynolds et al. 2002; Rauset et al. 2012).

Bears are primarily ambush predators that exploit opportunities provided by vegetation and topography to closely approach prey – including livestock – or natural impediments such as snow and water that provide them with comparatively greater mobility (Cole 1972; Gunn & Miller 1982; Bjorge 1983; Schleyer 1983; Mattson 1990; Craighead et al. 1995; Cristescu et al. 2014; Doan-Crider et al. 2017). Consequently, bears tend to preferentially prey on animals such as forest-dwelling moose that are more vulnerable to ambush (Mattson 1997b; Niedziałkowska et al. 2019). Alternatively, bears will use smell and area-intensive searches to seek out very young calves using immobility for their defense (French & French 1990; Gunther & Renkin 1990; Hamer & Herrero 1991; Blanco et al. 2011). Even so, calves are typically vulnerable to bear predation for only about 10-45 days of age largely because neonates of native ungulate species rapidly develop speed and agility (Ballard et al. 1991; Larsen et al. 1989; Adams et al. 1995; Swenson et al. 2007; Griffin et al. 2011; Brockman et al. 2017).

In many respects, cow-calves are ideal prey for brown and grizzly bears, especially prior to mid-July. Optimal-sized prey for grizzly bears of average weight (140-180 kg) is in the range of 95-120 kg – the approximate weight of June cow-calves born during February (Vézina 1985; Bourdon & Brinks 1982; Jakubec 1983). Cow-calves are also likely to be much more vulnerable than even 1-month-old native ungulates simply because they are less agile and, in the case of Angus cows, bred to be docile – a trait accompanied by lessened vigilance and diminished encephalization (i.e., intelligence) compared to wild ungulates (Haskell et al. 2014; Linnell et al. 1999; Kleuver et al. 2008; Flörcke & Grandin 2013; Balcarcel et al. 2021). These characteristics hold not only for cow-calves but also for attendant adults, which renders cow-calves vulnerable to bear predation even among other cattle.

The absolute as well as comparative vulnerability of cow-calves explains the pervasive tendency of bears to kill many more calves than adults on public as well as private rangelands worldwide (Murie 1948; Dorance 1982; Horstman & Gunson 1982; Bjorge 1983; Mattson 1990; Doan-Crider et al. 2017). In the nearby Greater Yellowstone Ecosystem (GYE), calves comprised over 70% of total cattle losses to grizzly bear predation during 2012-2021 – nearly 15-fold more than losses of adult cows present in comparable numbers (Van Manen et al. 2013-2022).

The potential severity of human-perpetrated impacts arising from conflicts over grizzly bear

predation on vulnerable cattle is highlighted by both history and current patterns of grizzly bear density and survival. Cattle flooded into California and the Southwest during the 1800s, resulting in heightened levels of grizzly bear predation on livestock, and consequent persecution by local people leading to the extirpation of grizzly bears in these regions (Storer & Tevis 1963; Brown 1985; Mattson 2022). Current distributions and densities of grizzly bears in North America continue to be negatively correlated with cattle densities, consistent with higher mortality rates of GYE grizzly bears on public land grazing allotments (Mowat et al. 2013; Merrill & Mattson 2003).

The EIS must address the variable risk of grizzly bears to livestock based on size and time of year as well as the well-documented importance of meat to grizzly bears, and the extent to which bears can be formidable predators on younger ungulates of all species, including cattle.

The EIS Must Analyze the Effects of Climate Change and Species-Specific Changes on the Potential for Conflict between Livestock Grazing and Grizzly Bears

The EIS must also consider and analyze the context for emerging changes in grizzly bear diets, food habits, and relations with livestock and people.

Cutthroat trout, whitebark pine seeds, and tissue from elk, bison, and moose were historically dominant sources of energy and nutrients for grizzly bears in the GYE – trout in southern Yellowstone National Park (YNP), pine seeds wherever available, and meat primarily in central and northern parts of the ecosystem (Mattson & Reinhart 1995; Mattson 1997b, 2000; Felicetti et al. 2004; Mattson et al. 2004; Gunther et al. 2004, 2023). With the exception of bison, these same food sources are available to bears in the BE presently, so research conducted in Yellowstone is again instructive in this respect (See e.g. 2000 BE EIS at 2-24, 3-16).

Grizzly bears in Yellowstone have long been known to eat more meat than any other grizzly bear population at mid-latitudes, accounting for >50% of assimilated nitrogen averaged over all bears and >70% of assimilated nitrogen for adult males (Mattson et al. 1991a; Green et al. 1997; Mattson 1997b; Hilderbrand et al. 1999b; Schwartz et al. 2014). Despite preying heavily on elk calves during mid-May to mid-July, most meat obtained by bears from predation historically came from adult ungulates, including bull elk and moose during the fall, and winter-weakened animals during the spring (Mattson 1997b).

This surprisingly heavy predation on vulnerable larger ungulates comports with the tendency of bears to maximize food reward within an acceptable range of risk of injury from prey, and further suggests that cow-calves would be and are optimal prey for adult grizzly bears.

Whitebark pine seeds were historically used nearly twice as heavily by female versus male grizzly bears in the GYE, with consequences for female reproductive success (Mattson 2000;

Felicetti et al. 2003b). Females that consumed more pine seeds reproduced earlier and more often had 3-cub litters. Annual variation in sizes of seed crops also had additional substantial effects on grizzly bear demography. Relative to adult males, subadult and female grizzly bears spent comparatively more time near people and human infrastructure seeking natural and anthropogenic foods during years when seed crops were poor. (Mattson et al. 1992; Haroldson & Gunther 2013). As a result, bears died at a much higher rate during years with poor seed crops, largely due to elevated levels of conflict with people (Mattson et al. 1992; Mattson 1998; Pease & Mattson 1999; Haroldson et al. 2006).

Grizzly bears historically compensated by eating more meat from native ungulates during years when other food sources such as whitebark pine seeds were scarce, including meat obtained from the remains of animals killed by hunters. (Mattson 1997b; Ruth et al. 2003; Haroldson et al. 2004). This compensatory consumption of meat when pine seeds were scarce logically suggests that grizzly bears would turn in a more sustained way to eating meat from ungulates – including cattle – if whitebark pine suffered widespread mortality.

Spawning cutthroat trout exploited by grizzly bears in streams tributary to Yellowstone Lake catastrophically declined in numbers beginning around 1990, with terminal losses occurring after 2000. Levels of exploitation by bears closely tracked these declines and have not since recovered (Reinhart & Mattson 1990; Felicetti et al. 2004; Haroldson et al. 2005; Fortin et al. 2013; Tiesberg et al. 2014). The Yellowstone Lake cutthroat trout population collapsed not only because of predation from non-native lake trout, but also because of climate-driven deteriorating hydrologic conditions in smaller spawning streams preferentially used by bears (Keading 2013, 2020).

Mature cone-producing whitebark pine trees suffered similar catastrophic mortality from an outbreak of mountain pine beetles during 2000-2010 driven largely by warmer temperatures in the typically frigid haunts of whitebark pine. By the end of this period, roughly 70% of mature trees had been killed by bark beetles, with relatively healthy stands persisting only at highest elevations of the Wind River Range in Wyoming and Beartooth Mountains in Montana (Macfarlane et al. 2013).

Losses of both whitebark pine and cutthroat trout in the GYE since 2000 were driven directly or indirectly by climate warming that precipitated greater vulnerability to a native predator in the case of whitebark pine, and hydrologic conditions deleterious to spawning habitats in the case of cutthroat trout. These same threats jeopardize these same species in the BE and must be analyzed in the EIS as they influence the potential for conflict between grizzly bears and livestock as discussed below.

Studies show that grizzly bears will compensate for losses in other food sources like these by

eating more meat from ungulates such as elk, bison, and cattle. This increased consumption in the GYE included elk calves (Barber-Meyer et al. 2008; Middleton et al. 2013), remains of hunter-killed elk (Podruzny 2012; Orozco & Miles 2013), undifferentiated ungulates (Fortin et al. 2013; Schwartz et al. 2014; Ebinger et al. 2016; Van Manen et al. 2023: Monitoring of Grizzly Bear Foods), and livestock (Gunther et al. 2004; Schwartz et al. 1999-2011: Human-Grizzly Bear Conflicts; Van Manen et al. 2012-2023: Monitoring of Livestock Grazing). The marked increase in exploitation of ungulates by bears that began in the early to mid-2000s and accelerated after the terminal demise of whitebark pine around 2010 is irrefutable.

In the GYE, much of this increase in meat consumption by bears after 2010 due to losses of both whitebark pine and cutthroat trout has involved exploitation of cattle using public-land grazing allotments located on the periphery of grizzly bear distribution, including areas where grizzly bears and cattle had been sympatric since well before 2000 (Wells et al. 2019, Van Manen et al. 2023). Levels of depredation-related conflicts have been orders-of-magnitude greater in the GYE during the last two compared to previous three decades despite a long history of sympatry between cattle and grizzly bears.

These increases in livestock depredation by grizzly bears in the GYE have led, in turn, to a dramatic escalation in the number of bears killed due to livestock-related conflicts since around 2008. Since 2000 this increase, together with an antecedent increase in numbers of bears killed during conflicts with big game hunters, has resulted in a proportional doubling of mortalities from meat-related conflicts with humans (Schwartz et al. 1999-2011; Van Manen et al. 2012-2023).

These increases in bear mortalities arising from meat-related conflicts have fueled a near four-fold increase in numbers of grizzly bears annually known to die in the GYE, leading, in turn, to a 2.5-fold increase in numbers of known bear deaths as a proportion of total estimated population size (total population size from Van Manen et al. 2023). This increase in the ratio of dead to live bears has occurred while proportions of known deaths attributable to natural causes have declined, casting into doubt the role of natural mortality in curbing growth of the GYE grizzly bear population since 2008.

Public land grazing allotments in the GYE spared noteworthy increases in depredation after 2010 have primarily been restricted to areas near army cutworm moth aggregation sites in alpine areas of Wyoming's Absaroka Range, i.e. locations with a compensatory food source other than livestock. These sites saw a dramatic increase in levels of grizzly bear activity after 2010 (Van Manen et al. 2021: Grizzly Bear Use of Insect Aggregation Sites), suggesting that, as in the case of increased meat consumption, increases in exploitation of fat-rich moths by grizzly bears have likely been in compensation for loss of whitebark pine seeds. Parenthetically, these substantial increases in levels of bear activity on moth sites have been synchronous with comparative stasis

in size of the GYE bear population which debars a significant effect attributable to increasing numbers of bears (Van Manen et al. 2023). The rapid emergence of heavy predation by grizzly bears on cow-calves in locales with comparatively long histories of sympatric cattle and bears highlights the extent to which recent histories of depredation are a poor basis for predicting a rapidly changing future. Nevertheless, broader trends in the GYE suggest that high levels of depredation can rapidly emerge in areas where whitebark pine has suffered heavy mortality, with a predictable toll on involved grizzly bears.

Overall, it is a fallacy to assume that maintenance of a fixed historical human infrastructure, reckoned almost wholly in terms of grazing allotments, roads, and other human developments somehow accounts for all the factors driving grizzly bear demography. The natural environment has changed dramatically in the GYE and elsewhere since 1998, driving related changes in grizzly bear diets, habitat use, and interactions with humans. These changes during the last twenty years have resulted in a dramatic change in the complexion and distribution of human-caused bear mortality, with a major shift to causes related to conflicts over meat – all while the extent of roads, developments, and grazing allotments has remained essentially the same as in 1998. The EIS must analyze these dynamic and continuing changes in the context of the BE.

<u>The EIS Must Analyze the Evolving Nature of Grizzly Bear Depredation on Livestock and the Associated Risks and Impacts for Grizzly Bears, Including How the Human Response to Depredation Shapes the Sex-Age Distribution of the Grizzly Bear Population.</u>

The nature and patterns of grizzly bear depredation on livestock has evolved over the last quarter century, and the EIS must analyze this development in the context of the BE.

Turning to longer-term patterns of grizzly bear mortality associated with depredation-related conflicts, removals of grizzly bears in the GYE because of predation on livestock shifted after 1998 from incidents predominantly involving depredation on sheep to incidents almost exclusively (>90%) related to cow-calf depredations (data from Schwartz et al. 1999-2011, Van Manen et al. 2012-2023).

More important than this shift from conflicts involving sheep to conflicts involving cattle, the sex and age composition of bears killed because of livestock-related conflicts changed from predominantly (>60%) adult male grizzly bears prior to 2018 to predominantly other sex-age classes thereafter. Even more problematic from a demographic perspective, the proportion of female deaths doubled from around 20% prior to 2016 to nearer 40% after 2020. Of these, roughly half were reproductive-aged females (data from Schwartz et al. 1998-2011, Van Manen et al. 2012-2023). This critical demographic trend has obvious impacts on the future population of grizzly bears that the EIS must analyze in the context of the BE.

This substantial increase in female mortality resulting from retaliations against predation on cow-

calves compromises prospects for the grizzly bear population for two key reasons. For one, growth of brown and grizzly bear populations has repeatedly been shown to depend on high survival rates among females – especially reproductive-aged females (Knight & Eberhardt 1985; Wiegand et al. 1998; Schwartz et al. 2006; Mace et al. 2012; Gosselin et al. 2015) – and, for another, growth rate of the GYE population substantially declined towards stasis around 2008, concurrent with terminal declines of whitebark pine and marked increases in consumption of meat from anthropogenic sources (Van Manen et al. 2023).

The increasing representation of females among bears killed to prevent or retaliate for livestock depredation is indicative of a convergence of male and female bear diets on meat obtained under risky conditions, all of which reflects major environmental change in the GYE since roughly 2005. More importantly, there is good reason to think that female grizzly bears will continue to comprise a large portion of bears killed because of future livestock-related conflicts, with critical implications for anticipating the composition of grizzly bear deaths in areas such as the BE that the EIS must evaluate.

A considerable body of scientific evidence demonstrates that increasing human activity, whether near or far, has predictable, negative effects on grizzly bears. Accordingly, the EIS must analyze the cumulative and increasing impacts on grizzly bears attributable to changes in the natural and human environments, including the effects of livestock grazing.

<u>The EIS Must Analyze the Critical Implications of the Unavoidable Conflict between Livestock Grazing and Grizzly Bears for the Future of the Species in the BE.</u>

Accounting for the impacts of livestock grazing is critical for the survival of grizzly bears as a species. The human response to the unavoidable conflicts between livestock and grizzly bears will be pivotal in whether this species recovers a viable population or resumes its prior decline.

According to the current scientific consensus, long-term viability of populations is best defined in terms of conditions required to achieve roughly 99% probability of persistence for a period of approximately 40 generations (Reed et al. 2003; Frankham & Brook 2004; Reed & McCoy 2014). For grizzly bears, with average generation lengths of approximately 10 years, this time frame equates to around 400 years.

Given this definition, current research suggests that for a species such as the grizzly bear, with a low reproductive rate and a low ratio of effective to total population size, around 2,500-9,000 animals in a contiguous inter-breeding population are needed to attain long-term evolutionarily meaningful viability (Lande 1995; Reed et al. 2003; Cardillo et al. 2004, 2005; Frankham 2005; Brook et al. 2006; O'Grady et al. 2006; Traill et al. 2007; Frankham et al. 2014).

We are still far from reaching this benchmark for grizzly bears in the contiguous United States.

Even the most optimistic estimates for total numbers of grizzly bears in the contiguous United States are in the range of 2,100 animals, but with these bears distributed among four isolated or partially isolated populations. Even the largest of these in the Northern Continental Divide and Greater Yellowstone Ecosystems number no more than about 1,000 bears (US Fish & Wildlife Service 2021; Van Manen et al. 2023). Achieving meaningful viability for grizzly bears in the contiguous United States will require genetic and demographic connectivity among existing populations along with full colonization of the Bitterroot Recovery Area, entailing the vigorous functioning of connectivity pathways.

The failure to properly analyze livestock grazing conflicts will harm individual grizzly bears and adversely affect prospects for meaningful recovery of not only the BE grizzly bear population, but also grizzly bears in the contiguous United States, primarily by impairing prospects for colonization of additional habitat and connectivity between existing populations in the GYE and elsewhere in the Northern Rockies and the Pacific Northwest.

In particular, the EIS must address the importance of meat in grizzly bear diets, the historical reliance of immigrant grizzly bears on meat from ungulates, the extent to which grizzly bears can be formidable predators, and the vulnerability of cow-calves to bear predation. All of these factors make grizzly depredation on cow-calves in the project area likely, and the EIS must therefore closely consider alternatives that attempt to mitigate livestock conflict through non-lethal measures as well as an alternative that significantly reduces or eliminates all livestock grazing.

<u>The EIS Must Analyze the Full Range of Possible Responses to Livestock Depredation including Retirement and Closure of Livestock Grazing Allotments,</u>

There is definitive evidence from the GYE showing that retirement of livestock grazing allotments is the best means of eliminating or reducing depredation-related conflicts with bears. The superiority of this approach is shown by lack of depredations on retired allotments throughout the GYE (Wells 2017; Wells et al. 2019), including a cessation of depredations after retirement of the Blackrock-Spread Creek allotment on the Bridger-Teton NF, where conflicts had been chronic since before the 1930s (Murie 1948; Knight & Judd 1983; Anderson et al. 2002), and a similar ending of depredations on retired sheep grazing allotments with long histories of chronic conflict (Johnson & Griffel 1982; Knight & Judd 1983; Jorgensen 1983; Van Manen et al. 2021). The EIS must analyze the potential impacts of retired grazing permits on reducing livestock conflicts and on the population of grizzly bears in the BE more widely.

Mechanisms that will reduce overall grazing in and around the BE should be a priority in the EIS analysis. When opportunities arise to reduce overall grazing activity on National Forests in and around the BE Recovery Zone, the managing agencies should have policies and mechanisms in place to make sure these opportunities are utilized. This approach would further reduce the

potential for grizzly mortality due to livestock conflicts, thus setting up the returning grizzly population for long-term success. There are a few ways to approach this that should be analyzed and included in an action alternative.

Vacant Allotment Closure

All currently vacant livestock grazing allotments within and adjacent to the BE should be closed to reduce the potential for future conflict. Administrative closure of vacant allotments is an option readily available to all National Forests operating within the area. This action could be implemented immediately on several Forests in the region, including the Bitterroot, Lolo, Nez Perce-Clearwater, and Beaverhead-Deerlodge. The Bitterroot NF, which constitutes considerable acreage within and adjacent to the BE, currently has 9 vacant grazing allotments, all of which could be administratively closed with minimal effort and little, if any, impact to existing permittees.[3] Likewise, the Nez Perce-Clearwater NF, which constitutes a large portion of the western BE, currently has 7 vacant grazing allotments, all of which could also be administratively closed with minimal impacts.[4] Finally, the Lolo NF currently has 1 vacant grazing allotment (Knowles Creek) that could be administratively closed in preparation for returning grizzly bears.

Allotment Retirement and Closure

The EIS should analyze provisions that facilitate permanent retirement of livestock grazing allotments for conflict reduction purposes. The National Forests within and around the greater BE should incorporate a provision requiring that grazing permits that are lost, relinquished, waived, or canceled, will have their attached AUMs held for watershed protection and wildlife habitat in perpetuity. Having provisions in place to take advantage of these opportunities when they arise would be an essential tool for conflict reduction and prevention that does not result in the lethal removal of grizzly bears.

Active Allotments and Demographic Connectivity Areas

During the analysis phase, special attention should be paid to currently active allotments that straddle or are adjacent to high value areas for grizzly bear demographic connectivity. Of particular importance is the Ninemile Demographic Connectivity Area (DCA), a large portion of which is managed by the Lolo NF. This area provides a crucial linkage between the BE and grizzly populations to the north in the NCDE and Cabinet-Yaak (Bader & Sieracki, 2024). In order to facilitate movement and subsequent genetic exchange between populations in these three

[3]For the Bitterroot NF, the vacant allotments are: Ambrose, Gold Creek, Little Sleeping Child, Trapper Peak, Bertie Lord, Piquett Creek, Warm Springs, Waugh Gulch-Andrews, and Coal Creek allotments.

[4]For the Nez Perce-Clearwater NF, the vacant allotments are: Blacktail, Newsome, Elk/Lick Creek, East Fork, Kirks Fork, Mallard Creek, and Florence allotments.

ecosystems, it is crucial to remove barriers to grizzly bear dispersal in areas rated as high probability connectivity pathways (Sells et al., 2023). The Ninemile DCA is highly rated for connectivity and contains several active grazing allotments.[5] Given the presence of these active allotments in the Ninemile DCA, the potential for livestock-grizzly bear conflict is high and would likely increase grizzly mortality risk, while also blocking the genetic exchange and migration needed for grizzly bear recovery. In addition to incorporating required non-lethal conflict reduction measures into the Ninemile DCA grazing permits, a high priority should be placed on actively seeking out and working with willing permittees on buyouts for allotment retirement.

Where Federally Permitted Livestock Grazing Occurs, the EIS Must Analyze the Impacts of Required Non-Lethal Conflict Deterrence Measures

Non-lethal conflict deterrence measures have been most successful in reducing conflict between livestock and grizzly bears. Selective removal of a few depredating grizzly bears can resolve conflicts for a short period of time (e.g., one to three years), contingent on specific circumstances (Anderson et al. 2002; Miller et al. 2016; Morehouse et al. 2018; Swan et al. 2017; Lennox et al. 2018; Proulx 2018). However, Murie (1948) and Linnell et al. (1999) cast doubt on the efficacy of such removals to abate depredations in the long-term.

In contrast, there is both correlational and causational evidence suggesting that non-lethal measures can reduce levels of depredation for sustained periods of time, including: guardian dogs; selective deployment of electric fence and other deterrents; change in species, sex, and age of grazed livestock; closer guarding; relocation of pastures during key periods of livestock vulnerability; and removal of livestock carcasses (Bjorge 1983; Wilson et al. 2005, 2006, 2014; Karlsson & Johansson 2010; Miller et al. 2016; Treves et al. 2016; Eklund et al. 2017; Moreira-Arce et al. 2018; Khorozyan & Waltert 2019a, 2019b; Wells et al. 2019; Wilson 2023).

In 2020, the Yellowstone Ecosystem Subcommittee's Technical Team produced a report detailing the leading causes of mortality for grizzly bears within the GYE. (Pils et al., 2020). This report found that "outside the Recovery Zone (RZ) but within the Demographic Monitoring Area (DMA), mortalities from livestock conflicts and self-defense kills are the primary sources of documented mortalities. Outside the DMA, livestock and site conflicts are the primary sources of mortalities." (Pils et al., 2020). From 1999-2008, there was an average of one grizzly bear killed per year due to livestock depredations outside the RZ and inside the DMA, with 0.3 grizzlies killed per year outside of the DMA following conflicts with livestock. From 2009-2018 the mortality rate increased significantly, with an average of 5.4 grizzly bears killed per year due to livestock depredations outside of the RZ and inside of the DMA, with 3.1 per year outside of

[5]These active allotments in the Ninemile DCA are: Upper Ninemile, Edith-Sixmile, Four Mile, Tamarack Creek, Henry Creek, Swamp Creek, McGinnis, Little Thompson, and Thompson River.

the DMA. This marked increase reflects an expanding grizzly population in the GYE and serves as a valuable learning opportunity for the agencies in charge of managing the return of grizzlies to the BE. While there may be a lower likelihood of livestock conflict during the initial stages of grizzly bears returning to the BE, it is important to outline requirements for non-lethal conflict prevention measures *prior* to any issues arising. To that end, the GYE technical team report recommended that the "highest" priority be placed on "emphasizing prevention vs. reaction" when it comes to livestock conflicts and producer outreach (Pils et al., 2020). The agencies now involved in planning for grizzly bears in the BE can benefit from these lessons and recommendations and take full advantage of the valuable guidance the GYE experience has provided.

Incorporating Non-Lethal Deterrence Measures Into Forest Plans & Grazing Permits

There are a variety of ways to incorporate the use of proactive, non-lethal conflict deterrence measures, and one of the most effective would be to incorporate standards into Forest Plans and grazing permits that provide clear instructions to grazing permittees. The sooner this can be implemented the better, so that livestock loss to grizzly bears, and the subsequent killing of grizzly bears, does not become the norm. With active federally permitted grazing on the Bitterroot, Lolo, Nez Perce-Clearwater, Beaverhead-Deerlodge, and Salmon-Challis National Forests, it is crucial that grazing permits and livestock programs on each Forest are updated to prevent these allotments from becoming grizzly bear population sinks.

One example of a National Forest taking proactive steps to address grizzly bear-livestock conflict is the Flathead National Forest in Montana. In its recently revised forest plan, the Flathead National Forest adopted several standards aimed at mitigating these conflicts. One standard provides that "new or reauthorized livestock grazing permits and annual operating plans shall incorporate requirements to reduce the risk of grizzly bear-human conflicts [and] include a clause providing for modification, cancellation, suspension, or temporary cessation of activities, if needed, to resolve a grizzly bear-human conflict situation." (Flathead NF Land Management Plan, 2018). Additional standards require that permittees promptly report and properly dispose of livestock carcasses, prohibit a net increase in the number of active sheep allotments on National Forest System (NFS) lands, prohibit an increase in the number of active cattle grazing allotments above the baseline on NFS lands, and provide that temporary permits for grazing by small livestock "shall not result in an increase in bear-small livestock conflicts." (Flathead NF Land Management Plan, 2018).

It is essential to ensure adequate mechanisms are in place on federal grazing allotments to prevent conflict, as opposed to hastily reacting to it. Instead of waiting to take any action until a grizzly bear is already frequenting a grazing allotment, land management agencies must proactively collaborate and come up with uniform requirements for non-lethal conflict deterrence measures on public lands. Some examples of successful non-lethal deterrence measures are

range-riding programs, carcass removal and disposal programs, and active monitoring for the presence of grizzly bears. Since poor livestock surveillance is strongly associated with livestock losses, experts recommend maintaining regular and frequent human presence to detect and reduce carnivore-livestock conflict on grazed lands. Trained individuals can closely monitor livestock and carnivore behavior, detect sick or dead livestock so that they can be promptly removed or properly managed, and keep herds or flocks together in defensible spaces (Parr et al., 2017; Barnes, 2015; Musiani et al., 2004). This approach, along with electric fencing around calving or lambing areas, guard dogs, securing livestock feed, and carcass removal and sanitation have all proven effective in reducing livestock-grizzly conflicts. An example of this success when applied consistently across the landscape can be found with the Blackfoot Challenge in Montana (Wilson et al., 2014; Wilson et al., 2023). Given that conflict prevention techniques work best when applied uniformly across the landscape, all agencies within the BE that have public lands grazing allotments should work together to develop a list of non-lethal deterrence measures that can be incorporated into grazing permits.

While the example of the Flathead NF provides a good starting point, there are additional measures that can and should be implemented. The following should be considered as a minimum for what should be incorporated into grazing permits for National Forests in the BE:

- require the immediate removal and composting of livestock carcasses found on grazing allotments;
- require removal of sick or injured livestock from the allotments, so they are not targeted;
- delay turnout until at least after mid-June, so that native ungulate young can provide a food source;
- in the event of a depredation, if future depredations are feared or anticipated, livestock should be moved to private pastures;
- keep livestock in open, defensible spaces to reduce opportunities for ambush predation;
- prohibit the turnout of young calves and lambs under 200 pounds in weight to reduce depredation potential, and protect calving and lambing areas with deterrents such as electric fencing; and
- require range riders and guard animals along with frequent and consistent monitoring of livestock.

Livestock Conclusion

Within any action alternative for grizzly bear management, the EIS must assess and analyze the reduction and/or elimination of federally permitted livestock grazing within and adjacent to the BE and, in areas where federally permitted grazing will continue, the EIS must assess and analyze incorporation of proactive, non-lethal conflict reduction measures into grazing permits. The managers in charge of planning in the BE have the benefit of a substantial body of recent

research demonstrating the efficacy of grazing allotment closure and non-lethal conflict prevention measures. Studies have clearly established that non-lethal methods are more effective than lethal control measures for preventing livestock depredation by large carnivores (Shivik et al., 2003; Lance et al., 2010; Breck et al., 2011; Stone et al., 2017; Barnes, 2015). Researchers have also found that, "[b]ecause wolves co-occur across most of the grizzly bear range in the American West, many practices useful for managing wolf conflict also work for grizzly bears," and that "carcass removal, electric fencing, human presence, range riders, and livestock guardian dogs are effective ways to deter both wolf and grizzly bear predation." (Western Landowners Alliance, 2018). Additionally, studies show that the effectiveness of non-lethal tools is enhanced when several types are used in combination on an adaptive basis (Bangs et al., 2006; Sime et al., 2007; Breck et al., 2012). This research comes from places where public land managers and users have had to adapt after conflict occurred (e.g. GYE). However, the BE has the opportunity to implement the lessons from this research before grizzly bears repopulate the area and ensure that grizzly bears, livestock, and people do not suffer in the same manner as they have in other ecosystems.

J. Impacts from hunting and trapping regulations that may impede the success of grizzly bear recovery efforts in the Bitterroot

The USFWS must consider how hunting, trapping, and snaring for wolves, coyotes, black bears, and marten in Montana and Idaho may impede the success of grizzly bear recovery efforts in this action. The purpose of the present action is to restore a grizzly bear population to the BE that, among other things, is protected by regulations that ensure grizzly bears and their habitats maintain long-term viability. However, several trapping, snaring, and hunting regulatory schemes in Idaho and Montana will impede the ability of the USFWS to meet this purpose. Regardless of what approach the USFWS ultimately takes, the agency must consider various hunting and trapping activities authorized by the states of Idaho and Montana that impact grizzly bears and the grizzly bear population.

1. Hound hunting and baiting for black bears

The USFWS must consider how regulations and legislation in Montana and Idaho allowing black bear hunting with hounds and baits may impede the success of recovery efforts.

Hound hunting

Both Idaho and Montana allow hunters to use hounds to find and pursue black bears in areas in and near the Bitterroot Ecosystem. Hound hunting black bears can lead to conflicts between hunters, hounds, and grizzly bears when hounds pursuing black bears pursue or encounter grizzly bears. Hound hunting of black bears can lead to mistaken identity killing if a hunter misidentifies

the bear, and self-defense killing because a grizzly bear in this situation is likely to fight the hounds, posing risks to all involved.

Idaho allows black bear hunters to use hounds, including in the Selway-Bitterroot Wilderness Area and in hunting units in and near the BE. And although outlawed in Montana since 1921, the 2021 state legislature passed a bill to once again allow hound hunting for black bears in the state (HB 468). Montana Fish, Wildlife and Parks 2023a. In response, 35 concerned professional wildlife biologists and managers in Montana wrote a letter to members of the Montana legislature and Montana Governor Gianforte opposing this bill because of the dangers it would create for grizzly bears. They wrote:

> "[H]ounds will chase grizzly bears who will fight and kill hounds. This will result in hound hunters shooting grizzly bears to defend their dogs or themselves when chased grizzly bears are encountered."

Servheen et al. 2021. Despite concerns from top grizzly bear scientists, the bill passed and Montana now allows hound hunting for black bears including in several areas in and near the BE: Bear Management Units 240, and parts of 200, 216, and 316. The Montana Fish & Wildlife Commission has also begun a rulemaking process to extend the spring hound hunting season by two weeks and to expand the area where hounds can be used to hunt black bears, including in the Ninemile watershed which is an important connectivity corridor between the BE and the Cabinet-Yaak Recovery Area.

Baiting

Idaho permits black bear hunters to use bait, which also attracts grizzly bears. Black bear baiting can and has resulted in the deaths of grizzly bears, demonstrating that these practices will impede successful grizzly bear recovery in this area. Idaho defines bait as "any substance placed to attract game animals." Idaho Dept. of Fish and Game, 2023. In some units, Idaho allows hunters to place bait on the landscape seven days before the hunting season opens; including in units in and near the BE.[6] Some of these are units on the Bitterroot National Forest where Idaho cautions hunters: "grizzly bears may be encountered." *Id*.

Grizzly bears have already been attracted to and killed at black bear bait sites in Idaho, including in the BE. In 2007, the first grizzly known to inhabit the Bitterroot Ecosystem since 1946 was killed at a bait station by a black bear hunter. And in June 2019, a grizzly was documented near a bait site during the hunting season in the Kelly Creek drainage of the Nez Perce-Clearwater National Forests in Idaho, within the BE. See Western Environmental Law Center. Therefore,

[6] These units include 10, 12, 16A, 17, 19, 20, 20A, 26, and 27. See Idaho Hunt Planner Map for more, available at https://idfg.idaho.gov/ifwis/huntplanner/mapcenter/.

the USFWS must consider how black bear baiting in Idaho in and near the BE poses risks for grizzly bears and how this could impede success of recovery efforts.

2. Wolf, coyote, and marten trapping and snaring

Several trapping and snaring regulatory schemes in Idaho and Montana may impede the success of grizzly bear recovery efforts in the BE. Grizzlies have been accidentally caught in wolf and coyote traps and snares and in marten traps, causing injury and sometimes death. Therefore, the USFWS must consider how these practices in Idaho and Montana may impede the success of recovery efforts in the BE.

Under current regulations, coyote, wolf, and marten trapping and snaring activities occur in and near the BE while grizzly bears are out of their dens in both Montana and Idaho. See Montana Fish, Wildlife and Parks 2023b; Idaho Department of Fish and Game 2023. Both states allow unlimited coyote trapping and snaring year round; Marten can be trapped in Montana from December 1 to February 15 in all trapping regions in the BE and in Idaho statewide from November 1 to January 31; and for wolves, Montana permits trapping and snaring in and near the Bitterroot Ecosystem from the first Monday after Thanksgiving to March 15, and Idaho allows wolf trapping and snaring in all areas in and near the BE from September or October to the end of March, depending on the area.

In Montana, for example, nearly 40% of grizzly bears have historically been active outside of their dens during times when Montana allows wolf trapping and snaring in and near the BE. Haroldson et al. 2002, Kasworm et al. 2021. There have also been numerous anecdotal accounts of winter-active bears ("winter bears") in the northern Rockies that do not den. See, e.g., Zuckerman 2015, Kearse 2019, Heinz 2022, Sherer 2021, Murdock 2023. And winter activity is only going to increase as annual temperatures continue to warm.

Both states' regulatory schemes heighten the risks to grizzly bears, heightened by changes in denning behavior discussed above. First, both states allow trappers to place baits and scented lures on traps and snares. The use of bait and scented lures for trapping and snaring any species drastically increases risks of incidental grizzly bear capture. McKim 2017, Lamb et al. 2022. Baits and scents will draw grizzly bears directly to these traps and snares, including from long distances, due to their extraordinary sense of smell. Additionally, both states allow a wolf foothold trap jaw spread of up to nine inches, which is large enough to capture even the largest grizzly bear. Both states also allow snaring for wolves and coyotes. Snares are inherently indiscriminate and can easily catch grizzly bears and cause serious injury and death.

Grizzly bears have been documented to lose toes, claws, and entire paws when they encounter traps and snares set for other species, and can suffer myriad other injuries even if they escape, including: toe amputations, bone fractures, sprains, dislocations, laceration, blunt force trauma,

mouth and gum damage from biting traps and snares, injuries caused by exposure to the elements, dehydration, attacks from other wildlife while trapped, and capture myopathy which can result in death days after incidental capture even if released. See, e.g., Lamb et al 2022, Cattett et al. 2003, 2008a; Powerl 2005, Cattett et al. 2008b.

Toe, claw, and paw injuries can result in long-term suffering and eventually death for grizzly bears. Grizzly bears are extremely dexterous and use their front limbs and paws as an integral part of most foraging behaviors, including catching larger mammals, excavating roots and rodents, manipulating shrubs to eat berries, and digging dens. Trapping injuries can thus have severe consequences for affected bears, making it difficult for these bears to carry out the most basic life strategies for eating and denning.

Trap check time requirements—or lack thereof—in both states further also increase the risk of harm to grizzly bears. For wolves, Montana requires a 48-hour trap check time for wolves and Idaho requires a 72-hour trap check time for both wolves and marten. Coyote trapping and snaring does not have check requirements for either state. Grizzlies caught in traps and snares for these lengths of time are at a higher risk of irreparable injury and death due to prolonged restraint, constriction, stress and dehydration which can lead to death.

For these reasons, the USFWS must consider how trapping and snaring for coyotes, wolves, and marten in and near the BE may impede recovery efforts.

K. Risks of Translocations and Success Data

FWS must assess the efficacy of assisted translocation as a viable recovery method including assessments from non-agency scientists and key publications including Miller et al. (1999) who wrote: “The technical considerations of translocation are closely related to the biological questions. They include legal framework, fiscal and intellectual resources, monitoring capacity, goals of the translocation, logistic challenges, and organizational structure of decision making.”

Key considerations include:
• *What are the prospects of new immigrants via unassisted movements?*
In this case we believe the prospects are quite high. The NCDE occupied habitat area now touches the BE and we show projected expansion deeper into the BE.

• *Are the reintroduction and source areas far enough apart to overcome the homing instinct of grizzly bears?*
In the case of human-assisted mechanical translocations they are far too close to overcome the return instinct which is very powerful in grizzly bears. “Excessive movement from the release site is a major reason for low survival and poor reproductive rates of translocated carnivores.” (Miller et al. 1999). To overcome this, minimum translocation distances for grizzly bears should

be > 241 km (H Reynolds, pers. comm. in Bader 2000b).

How would it affect the legal status of the animals?
A previous effort in 2000 would have designated the bears as "experimental, non-essential." That would have effectively delisted individual source bears taken from the NCDE by removing their legal protections under the ESA. A federal court in *Alliance for the Wild Rockies v. Cooley* found grizzly bears are now present in the BE and experimental, non-essential status "may not be advisable."

•*Has it been tried before?*
An augmentation program in the Cabinet Mountains has largely been a failure. Several translocated bears returned to the NCDE or were killed. Notably, of the 22 translocated bears, only three contributed genetically to the Cabinet Mountains population, and of these three, just one contributed 87% of documented offspring and there was just a 13% success rate per bear (Mattson pers. comm.). A 13% success rate would not result in Bitterroot repopulation.

Are there long-term political and financial commitments?
Management of wildlife and fish is vulnerable to frequent changes in political administrations and therefore policies and priorities. A previous plan to recover grizzly bears in the BE was politically defunded and essentially abandoned until the USFWS was sued to comply with federal laws and ordered to prepare a new EIS. A program in British Columbia was canceled after the first bear to be translocated died while being transported. If the plug on assisted translocations were pulled mid-stream, this would be proven to be an ineffective approach that results in mortality for the source population.

What is the organizational structure of decision-making?
Decision-making must be spread out over a scientific committee that includes non-agency scientists and consultants. Concentrating within state and federal agencies may bias the goals, process and the methods used.

Have the Underlying Causes of Population Decline or Extirpation Been Remediated?
In the case of the BE, both yes and no. The grizzly bear is now protected under the ESA which has limited illegal killings. The issues of habitat loss have not been addressed and in fact, long range National Forest management plans authorize many-fold increases in logging and are lacking and very tardy in implementation.

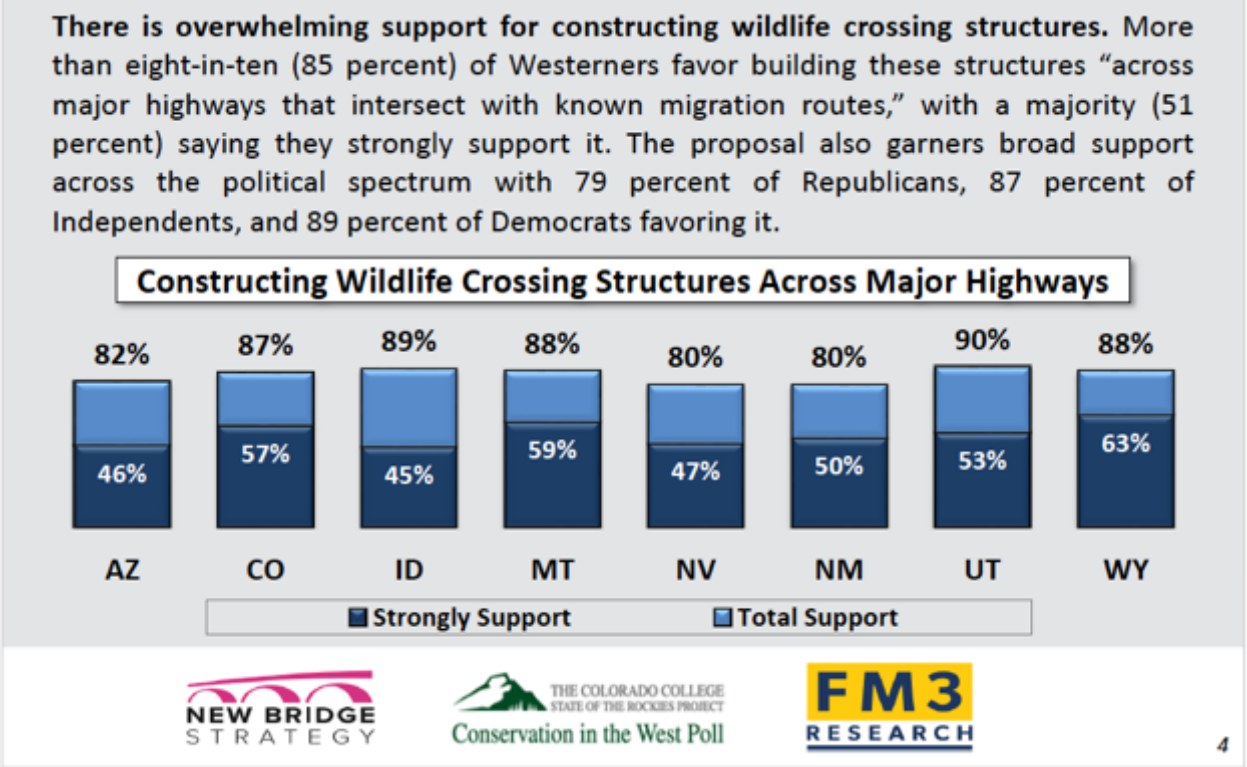
The NCDE is a source population for natural emigrations to the BE because the bears work it out on their own without unnatural interventions that require capturing, drugging and transporting bears long distances, which increases the risk of accidental mortality. Public attitude surveys (Shaw and Whalen 2021) suggest local residents have less resistance to grizzly bears coming to

the BE on their own as opposed to having grizzly bears actively moved in by the government.

L. Social Science

The USFWS must consider information from the social sciences including the attached Colorado College Conservation in the West poll. This survey found residents of Idaho and Montana support constructing passage structured across major highways. In Idaho, 89% are in support. In Montana, 88% are in support. Moreover, by 78% to 20% residents support passage structures and protection of migration corridors over development of resources.

Figure 114. Support for Wildlife Passage Structures. Colorado College Poll (2024).



M. Existence Value of a Recovered Population

USFWS must assess the non-quantifiable existence value of a recovered population of grizzly bears in the Bitterroot Ecosystem.

N. Science Committee

USFWS must consider the possibility of empaneling a scientific committee with a broader composition and role beyond state, federal and tribal employees.

O. Mining and Minerals Production

There is a boom of critical minerals mining activity in the cobalt and parallel rare earth elements (REE) mineral belts from the Continental Divide at Lost Trail Pass to Lemhi Pass and in the Salmon River area. Cumulative impacts from existing and expected mining and mineral exploration activities within and adjacent to the identified connectivity area along the Continental Divide and MT/ID stateline should be analyzed and disclosed in the EIS. These projects are being analyzed separately under different jurisdictions revealing regulatory inadequacy for managing grizzly bear habitat at a landscape level. Some mining exploration projects on the Salmon-Challis NF have been inappropriately authorized under the Categorical Exception (CE) authority exempting the agency from disclosing potential environmental consequences in an environmental assessment or impact statement in spite of the presence of extraordinary circumstances, including ESA listed species in the project area.

Forest Service regulations include a list of seven resource conditions that must be considered in determining whether "extraordinary circumstances" related to a proposed action make the use of a CE inappropriate, and include the following:

> (i) Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species; 36 C.F.R. § 220.6(b) (2008).

Apparently, the Salmon-Challis NF determined the presence of ESA listed species would not be significantly affected. However, "If the degree of potential effect raises uncertainty over its significance, then an extraordinary circumstance exists, precluding use of a categorical exclusion.". (See Forest Service Handbook 1909.15.31.2).

Multiple CE shortcuts used in the same area, especially within or adjacent to ESA species, and a corridor hosting multiple ESA species deserves a hard look at cumulative impacts and should in itself preclude any further use of a CE. The present situation represents regulatory inadequacy. For the purpose of analyzing potential cumulative impacts to the function of key connectivity corridors, the Bitterroot Grizzly EIS should provide a map showing existing mining and mineral exploration projects along the CD and Stateline corridors.

It should also display a map showing existing mining claims within 20 miles on both sides of the MT/ID state line from the Sheep Creek projects area to Lemhi Pass.The Sheep Creek rare earth mining project on the Bitterroot National Forest in Montana is active and growing along with some mining projects on the Salmon-Challis National Forest in Idaho, south of the MT/ID state line.

The Sheep Creek mine project at the head of the Bitterroot River on the Bitterroot National Forest in Montana is expected to soon undergo a NEPA process to analyze effects of exploration

drilling and road building. The habitat quality of the Sheep Creek project area is exceptional. It includes designated Bull trout habitat and hosts wolverine, lynx, fisher, big horn, mountain goats and elk. It is over seven square miles and includes a vulnerable bottleneck in the MT/ID stateline wildlands corridor where the Allan Mountain Inventoried Roadless Area narrows at the doorstep of connection with the BE Recovery Area.

Sheep Creek offers a project-scale real world example of what's at stake with mining activity, even just exploration, let alone an industrial scale mine. The Sheep Creek mine project area offers a useful site specific opportunity to apply the analysis guidance described above.

Figure 15. Sheep Creek Proposed Mine Site. Bitterroot National Forest.

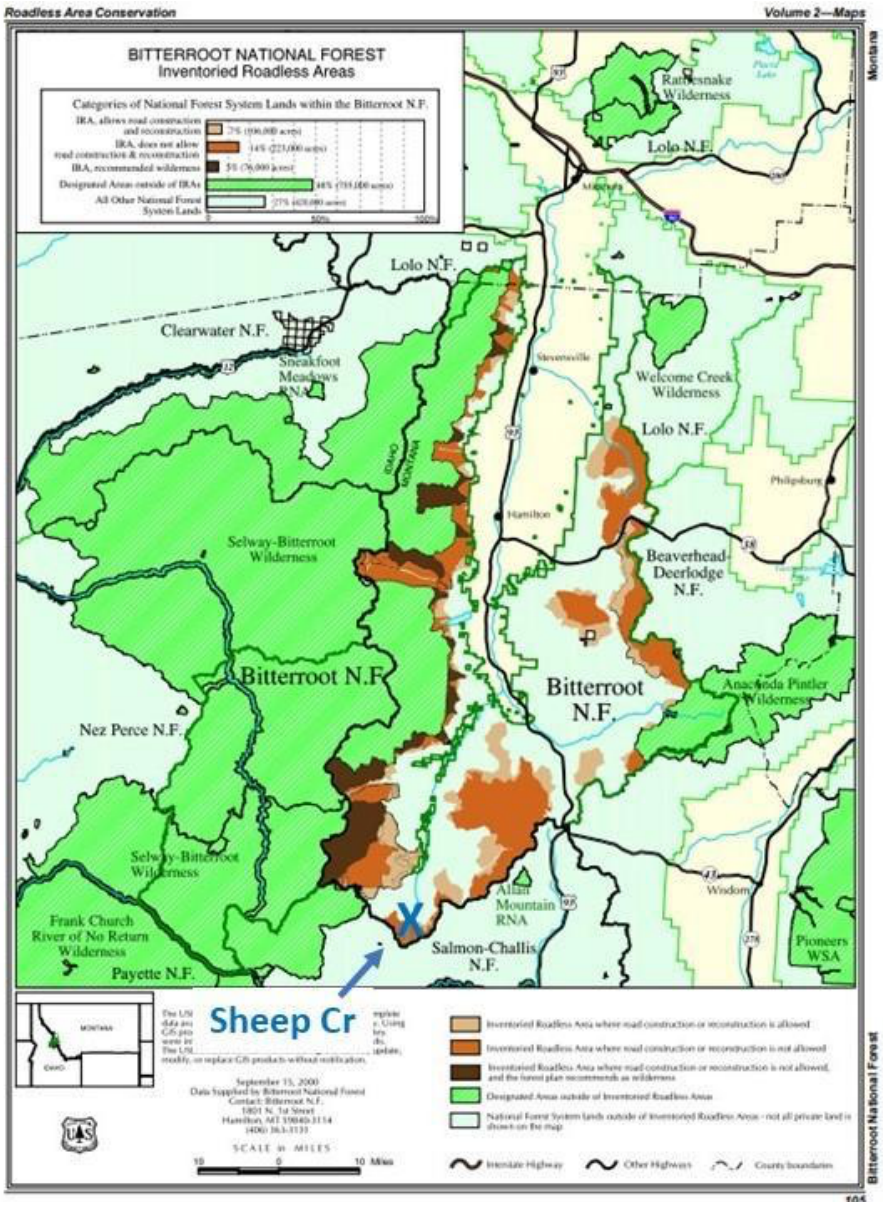
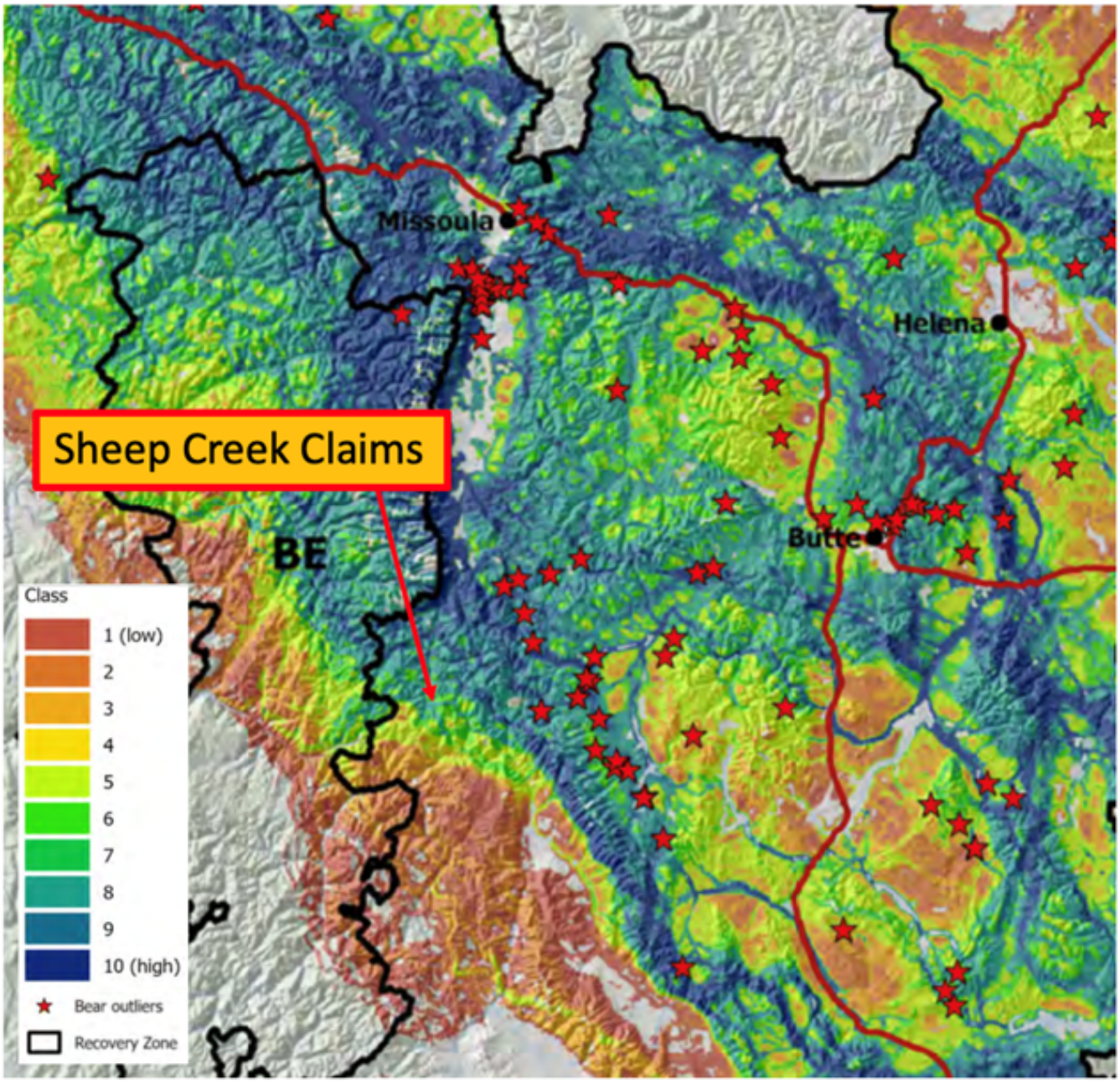
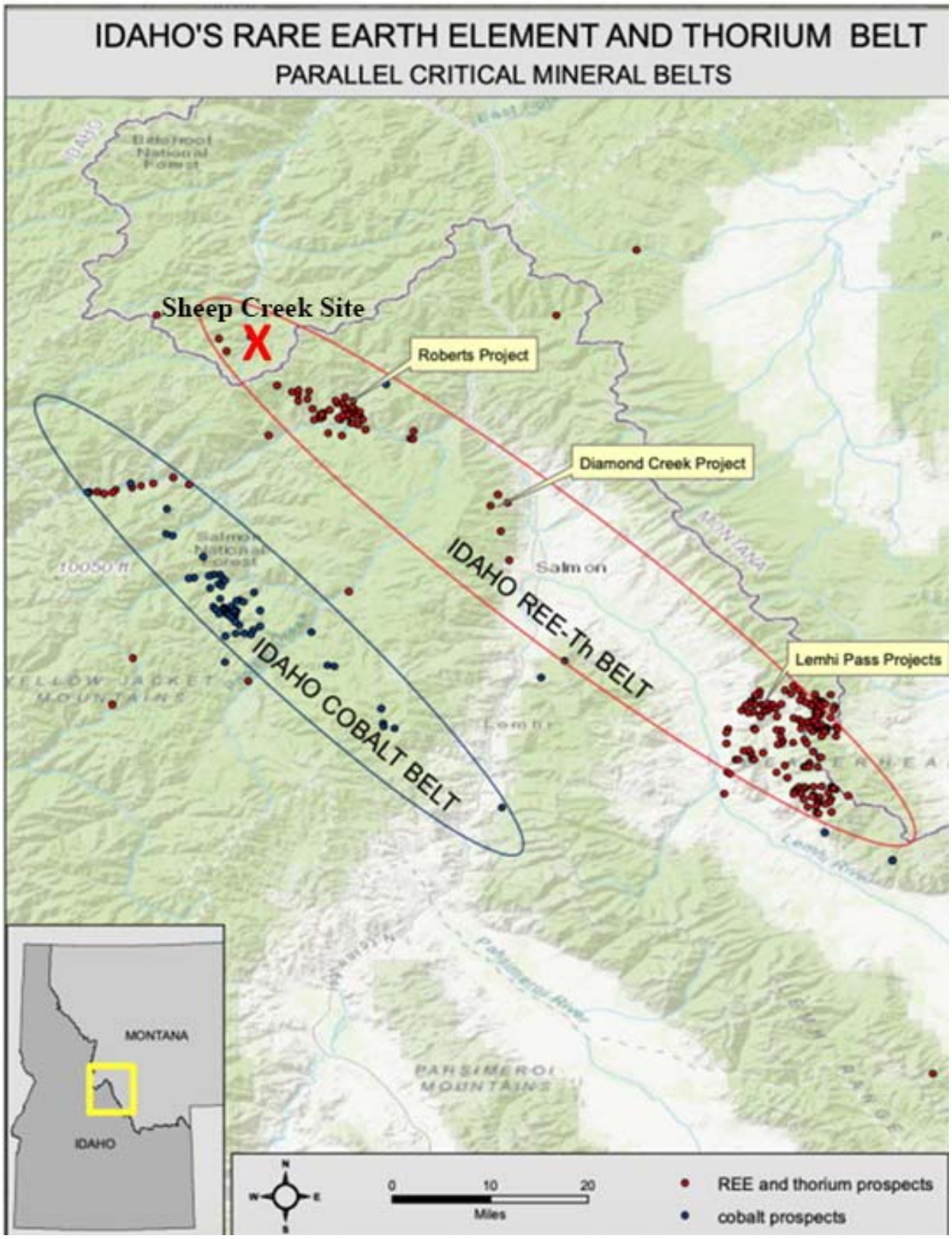


Figure 16. Grizzly Bear Connectivity Areas and Sheep Creek Site.



The above map is adapted from figure 3 in Sells et al. (2023). Stars indicate verified grizzly occurrences. Cooler colors indicate areas of less resistance to female grizzly movement. The figure shows that the mine claims lie in a connectivity pathway between the occupied Greater Yellowstone Ecosystem and the federally designated Bitterroot Ecosystem Grizzly recovery area.

Figure 17. Idaho Rare Earth Elements and Thorium Belt.



P. Restoration Areas

USFWS must identify areas for potential restoration including increasing habitat security in connectivity areas.

Q. Motorized Route Density Analysis

USFWS must assess total motorized route density for the recovery area and the connectivity areas.

R. Recreation

The Idaho and Montana human population is growing rapidly with the centers of this growth concentrated within the areas adjacent to and between the grizzly bear recovery areas. This growth will have profound impacts on maintaining a viable grizzly bear population due to housing demands, recreation demands, and other amenities. Increasing development of wildlife habitat and the accelerating pressure on our wild lands by more and more people and recreation demands diminishes the grizzlies' chances of survival. Recommendations from the Montana Governor Grizzly Bear Advisory Group for managing recreation should be adopted in full including objective monitoring and assessment of successes, failures, and ability to adapt in favor of protecting grizzly bears.

S. New Forms of Recreation Use

In the 1980s manufacturers began producing recreational machines that could go farther into previously inaccessible terrain. High power snowmobiles can traverse deep powder snow, enabling off-trail "high marking." Mountain bikes became widely available and now feature shock absorbers, gas and electric-powered motors and spiked tires for over-snow use. ATVs are bigger and go faster. New technology includes snow bikes which are modified motorcycles with tracks instead of wheels which can access off-trail areas and negotiate tight spaces. Mountain bike advocates say that electric powered bikes are not motor vehicles but that's like saying a Prius or a Tesla isn't an automobile because they have electric-powered engines.

Recreation impacts on grizzly bears can take two forms: displacement and habituation, both of which are bad. Displacement drives grizzly bears away from high quality habitats with primary food sources, resulting in direct loss of habitat as well as habitat security which can reduce fitness and the ability for females to rear cubs (USFWS 2022). Grizzly bears that habituate to areas with high human recreational activity may lose their natural fear and avoidance of humans, which can lead grizzly bears to approach human residences and campsites and result in direct conflicts often resulting in the lethal removal of the bear.

The DEIS must address impacts from mountain bikes. Dr. David J. Mattson and other leading grizzly bear scientists have analyzed the impacts of different forms of recreation on grizzly bears, finding that mountain biking is many times more likely to result in a grizzly bear-human encounter and as much as 14X as much compared to activities such as hiking. Dr. Mattson is well-known as the former Field Team Leader of the Yellowstone Interagency Grizzly Bear Study Team. Mattson (2019) at pages 36-37 includes this statement:

> The few investigations of encounters between bikers and grizzly bears paint a stark picture (Schmor 1999, Herrero and Herrero 2000, Honeyman 2007, Servheen et al. 2017. Data polled from all of these reports show that 87% (+-)4.6%) of all documented encounters were at distances less than 50m, and that 52% (+- 10%) involved females with young. Of those close encounters, 89% (+- 6%) resulted in the biker either being approached or charged by the involved bear.

Likewise, a Board of Inquiry Report chaired by the former National Grizzly Bear Recovery Coordinator (Servheen et al. 2017) on the death of a mountain biker who crashed into a male grizzly bear was well-publicized. Dr. Servheen has also said that mountain biking in grizzly bear habitat is particularly conducive to bear-human confrontations due to surprise encounters:

> High speed and quiet human activity in bear habitat is a grave threat to bear and human safety and certainly can displace bears from trails and along trails. Bikes also degrade the wilderness character of wild areas by mechanized travel at abnormal speeds."

(Servheen quoted in Wilkinson 2020). Food storage at campsites and day use areas is ineffective and insufficient at both the state and federal level.

Meanwhile efforts on many national forests are focused on expanding recreational opportunities adjacent to state-managed lands that are within critical grizzly bear habitat. For example, "There has been an increase of Special Use Permits issued on the Flathead National Forest. Most have been issued using Categorical Exclusions without cumulative effects analysis" (Bader, Hammer, & Montgomery, 2022). This includes commercially sponsored foot races, snowmobile guiding, snow biking, cross country and downhill skiing, mountain biking and more.

According to Hammitt et al. (2015)

> The intrusion of humans into wildlife habitats during recreational activities can cause various types and levels of change in both animals and their habitat. First, the normal behavior of animals may be altered to various degrees, all the way from habituation to slight modifications to migration from impacted sites. Secondly, animals may be displaced completely to a new habitat or, in the case of sport hunting, and traveling, displaced from the population. Thirdly, all these impacts can cause a reduction in the reproductive level of many species. Ultimately, these impacts result in a change in the species composition and structure of wildlife populations, (p. 59-60).

Snowmobiling is also an impact on grizzly bears that USFWS must analyze. With climate change, grizzly bears are entering dens later and emerging earlier. Based on outdated information, state and federal agencies allow motorized over-snow use well beyond the time of den emergence and as late as April 30 by which time all grizzly bears have emerged from dens.

T. BMUs that have been mapped and areas needing BMU mapping

USFWS must assess BMUs that have been mapped by other sources including Mattson (2021) and Bader and Sieracki (2023) (see below). USFWS must either adopt these BMUs or clearly articulate exactly why it will not. USFWS must also map BMUs for the south half of the analysis area (generally south of the Salmon River).

Figure 18. BMUs for the Nez Perce-Clearwater National Forests. Mattson (2021).

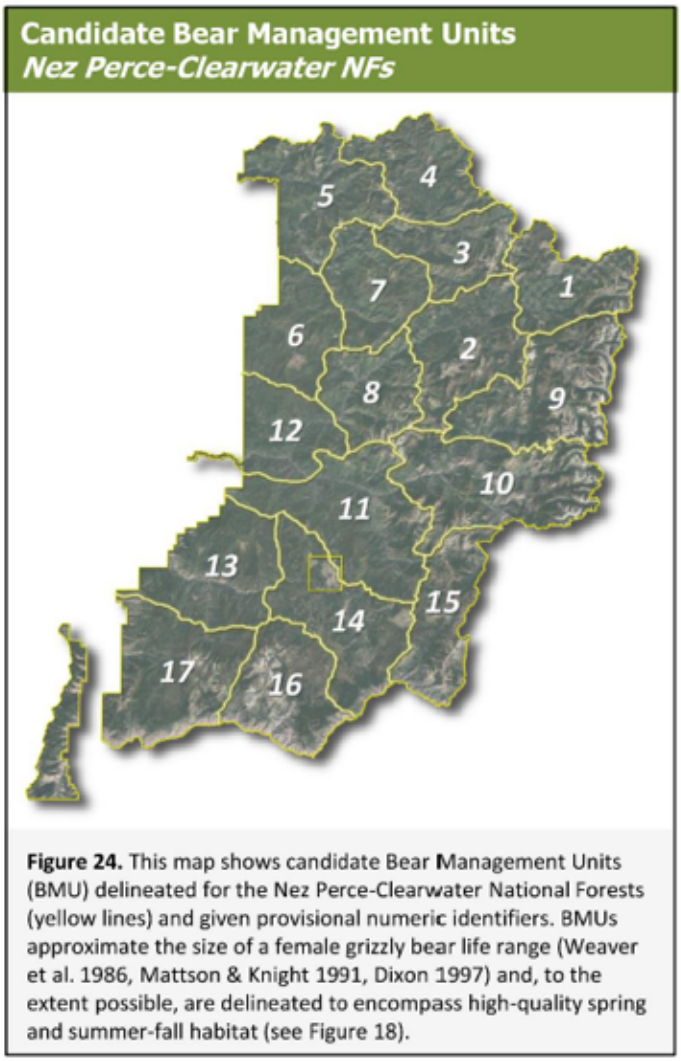


Figure 19. BMUs for the Bitterroot and Beaverhead-Deerlodge National Forests. Bader and Sieracki (2023).

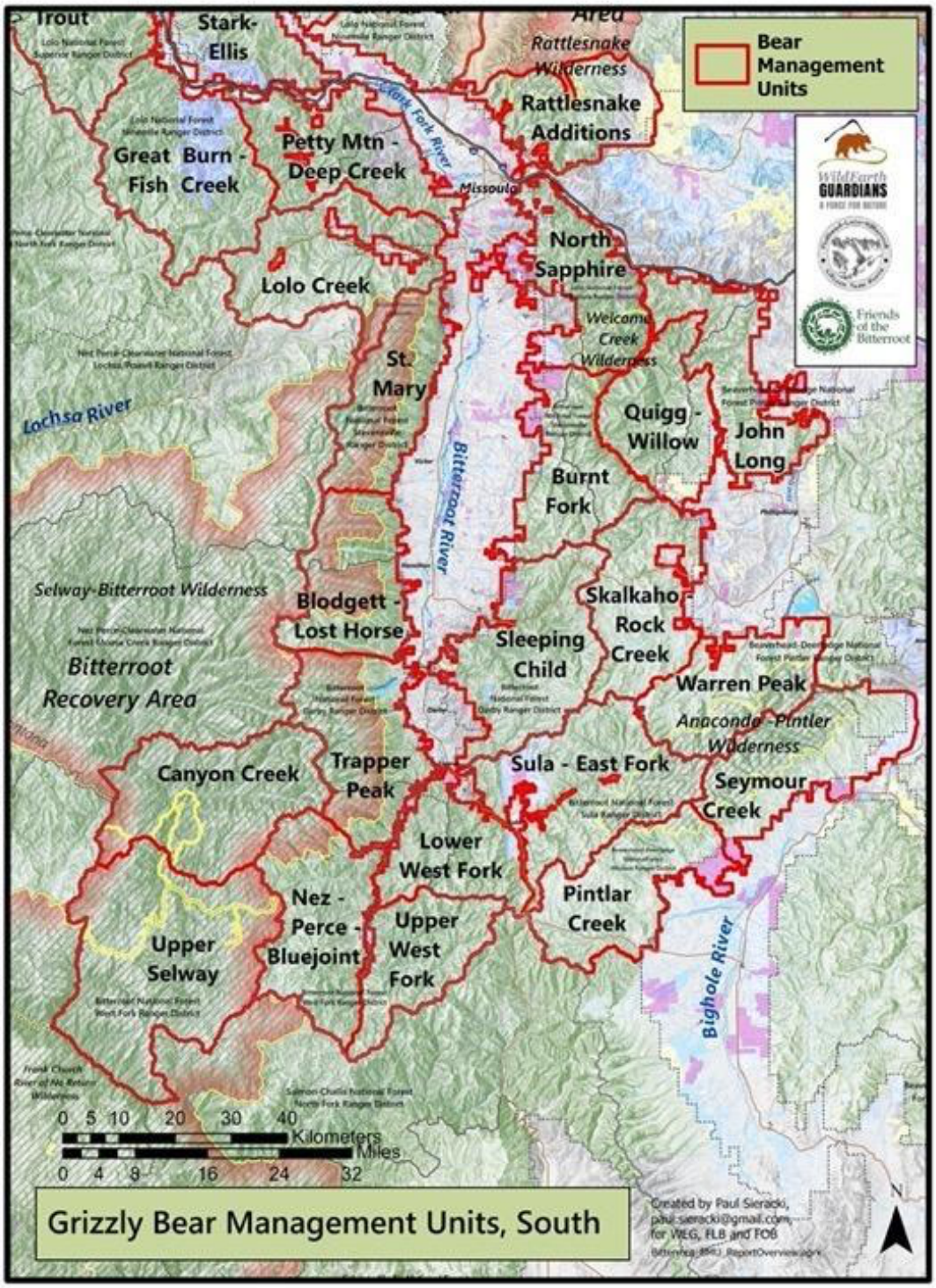


Figure 20. BMUs for the Lolo National Forest. Bader and Sieracki (2023).

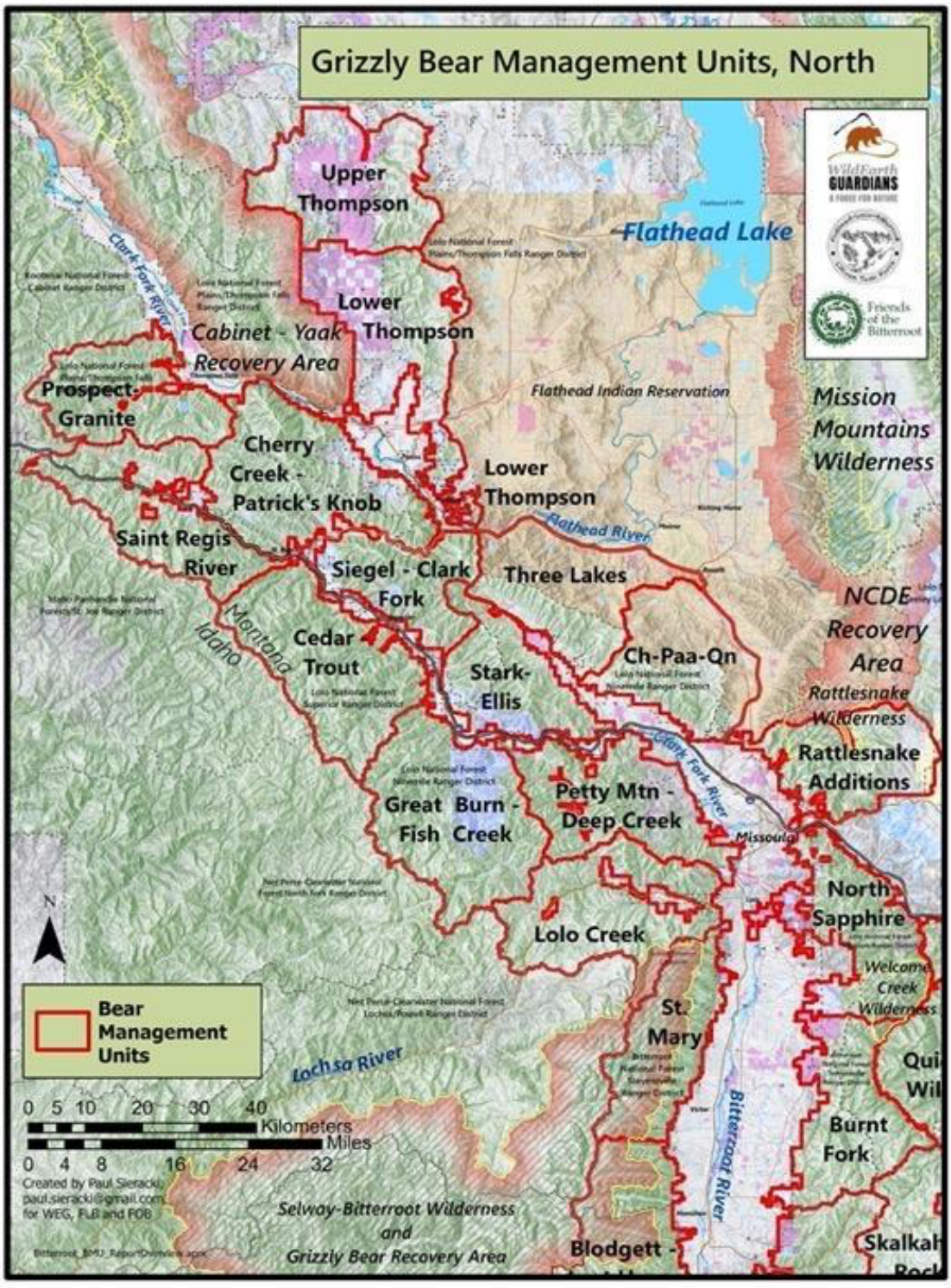


Table 1. Proposed Bear Management Units by Size and Management Agency.

Bear Management Unit	Acres	Square Miles	Square Kilometers	Hectares	Primary Management
Ch-Paa-Qn*	129,850	203	526	52,548	Lolo NF/FIR
Stark-Ellis*	104,927	164	425	42,462	Lolo NF
Three Lakes*	136,912	214	554	55,407	Lolo NF/FIR
Siegel-Clark Fork*	93,842	147	380	37,976	Lolo NF
Upper Thompson	151,197	236	612	61,187	Lolo NF/ Conservation Easements
Lower Thompson	170,139	266	689	68,853	Lolo NF/ MT State Lands
Cherry Creek - Patrick's Knob	184,884	289	748	74,820	Lolo NF
Saint Regis River	137,125	214	555	55,492	Lolo NF
Prospect-Granite	119,902	187	485	48,523	Lolo NF
Great Burn - Fish Creek	196,823	308	797	79,652	Lolo NF/MT State Lands
Cedar - Trout	174,636	273	707	70,673	Lolo NF
Petty Mtn - Deep Creek	137,642	215	557	55,702	Lolo NF
Lolo Creek	159,153	249	644	64,407	Lolo NF
Rattlesnake Additions	112,771	176	456	45,637	Lolo NF

St. Mary	118,312	185	479	47,879	Bitterroot NF
Blodgett - Lost Horse	125,825	197	509	50,920	Bitterroot NF
Trapper Peak	146,948	230	595	59,468	Bitterroot NF
Nez Perce - Bluejoint	153,695	240	622	62,198	Bitterroot NF
Upper Selway	280,173	438	1,134	113,382	Bitterroot NF
Canyon Creek	187,608	293	759	75,922	Bitterroot NF
Upper West Fork	102,672	160	416	41,550	Bitterroot NF
Lower West Fork	100,133	157	405	40,522	Bitterroot NF
Sula - East Fork	184,603	288	747	74,706	Bitterroot NF
Sleeping Child	170,433	266	690	68,972	Bitterroot NF
North Sapphire	134,370	210	544	54,378	Bitterroot NF
Burnt Fork	128,665	201	521	52,069	Bitterroot NF
John Long	123,936	194	502	50,155	Beaverhead-Deerlodge NF
Skalkaho - Rock Creek	136,026	213	551	55,048	Beaverhead-Deerlodge NF
Quigg - Willow	115,355	180	467	46,682	Lolo-Beaverhead-Deerlodge NFs
Warren Peak	123,422	193	500	49,947	Beaverhead-Deerlodge NF
Pintlar Creek	136,628	214	553	55,292	Beaverhead-Deerlodge NF

Seymour Creek	154,025	241	623	62,332	Beaverhead-Deerlodge NF
Totals: (n = 32)	**4,632,632**	**7241**	**18,752**	**1,874,581**	-
Range and Mean (n = 32)	**93,842-280,173** $\bar{x}$ **= 144,770**	**147-438** $\bar{x}$ **= 226**	**380-1,134** $\bar{x}$ **= 586**	**37,976-113,382** $\bar{x}$ **= 58,581**	-

*Ninemile Demographic Connectivity Area (designated in the Conservation Strategy for Grizzly Bears, USFWS 2018)

U. Systematic Hair Trap DNA Survey

USFWS must assess the need for a systematic hair trap DNA study throughout the analysis area as described by Kendall, et al. (2012) and Fortin-Noreus (2023).

V. Methods for Estimated Time Until Breeding Occurs

USFWS must explain the analysis and methods used to come up with the estimate of 15-20 years before female grizzly bears and reproduction begin in BE.

W. Analyze the Potential Impacts of GYE and/or NCDE Delisting and Return to State Management on BE Recovery

USFWS must assess the impacts from a potential delisting of either or both the NCDE and GYE populations. NEPA requires analysis of reasonably foreseeable scenarios. While the decision on the delisting petitions is outside the scope of this EIS process, the potential impacts of removing protections for the main source of immigrants must be analyzed and clearly described in the DEIS. These include trophy hunting of grizzly bears that would disproportionately impact grizzly bears outside Recovery Areas which are the source of migrants into the Bitterroot Ecosystem. If migrants are cut off, the EIS process would be establishing yet another isolated population, the opposite of a successful recovery strategy.

X. Use of Best Available Scientific and Commercial Information

The USFWS has an obligation under the ESA to use "the best available scientific and commercial information." This not only includes peer-reviewed published papers, but also reports that have not been published in science journals. Where there is incomplete or missing information from government sources, USFWS must consider what is available whether peer-reviewed or not. The Federal District Court for Western Montana has included survey reports from citizen conservation organizations (Flathead Plan case; Black Ram Case) even when the

Forest Service had its own surveys. Thus, USFWS must consider peer-reviewed published papers including Bader and Sieracki (2022) and reports that are compilations of scientific data and maps including Mattson (2021), Bader and Sieracki (2024) and a public sites sanitation survey on the Nez Perce-Clearwater National Forest (Friends of the Clearwater 2019, revised 2024).

Y. Consideration of Citizen Alternatives

The USFWS must consider in good faith alternatives submitted by citizens groups, tribal groups and scientists. In analyzing these alternatives, USFWS should not insert "poison pills" to disqualify them. For example, saying an alternative would result in drastic reductions in logging when the alternative does not contain such actions. Another example would be assuming an alternative calls for large Congressional appropriations when it does not.

Conclusion

In sum, we respectfully urge the U.S. Fish and Wildlife Service to meaningfully address the aforementioned issues and utilize the provided information enclosed with our comments. Doing so will ensure the agency provides a robust analysis necessary to comply with the National Environmental Policy Act, and ultimately inform the best path for grizzly bear recovery within the Bitterroot Ecosystem and across the Northern Rockies.

Cordially,

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