Friends of the Clearwater
Keeping Idaho's Clearwater Basin Wild
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February 14, 2025

Transmitted via the project web portal at:
https://cara.fs2c.usda.gov/Public/CommentInput?project=66722

Attention: Objection Reviewing Officer
USDA Forest Service, Northern Region

Re: Granite Project Objection

Objection Reviewing Officer:

Pursuant to 36 CFR Part 218, Friends of the Clearwater (FOC), Alliance for the Wild Rockies (AWR), WildEarth Guardians, Friends of the Bitterroot, Inland Empire Task Force and Native Ecosystems Council file this objection to the final Environmental Assessment (EA) and draft Decision Notice and Finding of No Significant Impact (DN) for the Granite Fuels Project. This action is proposed by the Forest Service (FS) for the St. Joe Ranger District of the Idaho Panhandle National Forests (IPNF). The responsible official is District Ranger Benjamin Johnson.

The DN documents the Responsible Official's decision to implement the proposed action, including "prescribed fire treatments of up to 10,000 acres per year for up to 10 years" totaling about 71,000 acres according to the EA.

Within this objection, we incorporate our previous comments on the EA, as stated in the November 13, 2024 letter signed by the Lead Objector. Since the Forest Service's written responses to our comments were so evasive and nonresponsive, the problems we identified go unresolved and are thus also fully pertinent and relevant at this stage of the public process.

We also incorporate within this objection the EA comments and the objections submitted by Mike Garrity and Sara Johnson, on behalf of Alliance for the Wild Rockies et al. and Native Ecosystems Council et al., respectively.

These objection statements are connected to our prior comments or issues that arose after the EA comment period. Attachments, references, and other incorporated documents are included on the data disk along with the objection, sent to the Forest Service via US mail postmarked this date.

PUBLIC INVOLVEMENT AND THE NATIONAL ENVIRONMENTAL POLICY ACT

As discussed in those previous comments at page 1, the Granite Fuels project would implement the 2015 Revised Forest Plan (RFP). Rather than verify that the general statements the RFP

makes about forest conditions do in fact apply to the project area, the EA indicates the FS simply assumes the RFP descriptions to be correct—in the absence site-specific/project area data.

Without having completed any site-specific analysis to date, the FS concludes that its proposed widespread fire-setting scheme in a roadless area/recommended wilderness will have "no significant impacts."

Whereas the EA claims that "Proposed treatment needs within these MAs were determined by comparing existing landscape and stand conditions to the desired conditions" the EA doesn't cite or state any site-specific data on "existing landscape and stand conditions." So the EA cannot actually demonstrate the "proposed treatment needs … are consistent with IPNF Land Management Plan."

This is also demonstrated by the Forest Service's choice to use "condition-based management." The EA says, "Condition-based management is a management approach that allows a response to **changing** conditions between the decision and implementation phases" (emphasis added). But this is absurd—how can the FS know what's "changed" since they don't know what the conditions are currently? The EA fails to specify what precise—or even range of—conditions will spur them to set the forest on fire in any location. Nor how intense or widespread the burning ought to be, based on conditions at any time. In so many words the EA just says we'll set fire to create, vaguely, "desired conditions." And in response to our comments on the first version of the EA, this latest EA makes no attempt to be more specific.

The EA says, "Condition-based management allows the District Interdisciplinary Team, (IDT) to continuously **analyze** and **issue decisions** for prescribed fire projects that meet **project objectives**" (emphases added). But the National Environmental Policy Act (NEPA) requires such analyses be done *prior* to the draft DN, which the Forest Service would sign *before* those post-decision analyses. Furthermore these post-decision decisions would theoretically be based upon conditions the FS finally discovers in the project area—yet for which NEPA requires disclosure in EAs *before* the DN is signed. In short, "condition-based" management as utilized for this proposal is an evasion of NEPA—revealing a disdain for the public that is entitled to analyses *before* DNs are signed.

And what of these "project objectives"? The EA says, "In summary, the conditions described above would create a mosaic of burned and unburned areas meeting the objectives described in the purpose and need." But the Purpose and Need doesn't express objectives. Later the EA characterizes "objectives of the Granite Fuels proposal as a whole and within the SPWMA is to use prescribed fire to move the forest towards historical condition, increase the diversity of age classes in the vegetation, and improve big game habitat." Again, the EA doesn't show the FS has gathered data to show there is any need to "move" anything.

And later, the EA again characterizes "objectives from Purpose and Need including, but not limited to…" and then identifies these two:

- Reduce heavy concentrations of dead and down fuel…
- Reduce stand density and create a variable stand structure with multi-storied stands…

… in the context of a complete lack of describing site-specific conditions anywhere in the project area meeting some objective definition of "heavy fuel" or "stand density." Also included in those objectives is "establish a pattern of forest conditions across the landscape that consists of a range of patch sizes that have a diversity of successional stages, densities, and compositions." But that merely echoes desired conditions in the RFP (*see* FW-DC-VEG-05). The EA conflates RFP desired conditions with project objectives to evade NEPA requirements to conduct site-specific analysis.

Another objective is "Use managed ignitions to improve edible vegetation conditions for big game species by regenerating the decadent shrub component as well as increasing palatable shrub, grass, and forb availability." Where are these decadent shrubs, and where are the grasses and forbs needing their palatability enhanced? How is this determined, if this is indeed an issue at all? How does the FS know that big game forage is in any way limited in the project area? This is information the public (and frankly, the decisionmaker) needs during the NEPA process so genuine dialogue may occur prior to a DN being signed.

And as our previous comments indicate, the FS illegally bypasses a genuine scoping step by initiating the NEPA process with its first version of the EA having already been written. (Public opinion on its scope be damned!) This latest version of the EA doesn't reflect any desire on the part of the FS to collaborate with the public as part of a genuine scoping process.

Remedy: Start over with a genuine scoping process for public comment, then insert NEPA analyses based upon data specific to the project area into an EIS for a second public comment phase. Provide written responses to each of our comments, including those we stated previously, and those additional ones in this objection. Prepare an EIS that addresses the scientific controversy surrounding the proposal, and one that fully analyzes and discloses the direct, indirect, and cumulative damages that would occur under the proposed project, as our comments raise.

UNLAWFUL FOREST PLAN

Our previous comments on the EA raised this issue and are incorporated herein.

George and Zack, 2001 "recommend that managers: (1) identify the wildlife species they want to target for restoration efforts, (2) consider the size and landscape context of the restoration site and whether it is appropriate for the target species, (3) identify the habitat elements that are necessary for the target species, (4) develop a strategy for restoring those **elements and the ecological processes that maintain them**, and (5) implement a long-term monitoring program to gauge the success of the restoration efforts." (Emphasis added.) None of this is found in the RFP.

Remedy: Select the No Action Alternative. Otherwise, prepare an EIS that addresses the issues identified in our objection to the RFP and in our comments on the Granite Fuels EA.

CONSISTENCY WITH FOREST PLAN AND OTHER DIRECTION

Our comments stated, "The FS must demonstrate consistency with all the applicable direction in the Forest Plan to comply with NEPA and NFMA. The EA doesn't provide enough discussion or analysis to demonstrate project or management consistency." The FS responded:

> The Granite Fuels project is consistent with the IPNF Forest Plan Management Areas (MA) as demonstrated in the Forest Plan Consistency document. The project tiers to specific IPNF Forest Plan desired conditions for each MA. The project is consistent with the Forest Plan (e.g., INFISH/PACFISH) as proposed activities in RHCAs would not prevent the attainment of Riparian Management Objectives.

We cannot fathom how the "Forest Plan Consistency document" found in the online project files demonstrates anything but a failure of the FS to read the Forest Plan. For example, mandatory direction such as standards are not even stated in that document, in favor of vague tallies of "standards are adhered to" or "standards are not applicable" etc. The above response to comments is absurd.

This same lack of analysis exists in the EA regarding the Idaho Roadless Rule and its management direction on the roadless lands dominating the project area.

Remedy: Select the No Action Alternative.

CUMULATIVE EFFECTS

Remedy: Prepare an EIS that fully analyzes and discloses the direct, indirect, and cumulative impacts associated with the Granite Fuels project, which the incorporated comments and objections discuss more specifically.

ECOLOGICALLY DEFICIENT REVISED FOREST PLAN "DESIRED CONDITIONS"

Remedy: Select the No Action Alternative. Otherwise, prepare an EIS that addresses the issues identified in our objection to the Forest Plan and in our comments on the Granite Fuels EA.

CLIMATE CHANGE AND CARBON SEQUESTRATION

Millar et al. 2007 state:

> Over the last several decades, forest managers in North America have used concepts of historical range of variability, natural range of variability, and ecological sustainability to set goals and inform management decisions. An underlying premise in these approaches is that by maintaining forest conditions within the range of presettlement conditions, managers are most likely to sustainably maintain forests into the future. We argue that although we have important lessons to learn from the past, we cannot rely on past forest conditions to provide us with adequate targets for current and future management. This reality must be considered in policy, planning, and management. Climate variability, both

> naturally caused and anthropogenic, as well as modern land-use practices and stressors, create novel environmental conditions never before experienced by ecosystems. Under such conditions, historical ecology suggests that we manage for species persistence within large ecoregions.

Millar et al. 2007 state:

> Given the urgency of keeping additional carbon out of the atmosphere and continuing carbon accumulation from the atmosphere to protect the climate system, it would be prudent to continue protecting ecosystems with large trees for their carbon stores, and also for their co-benefits of habitat for biodiversity, resilience to drought and fire, and microclimate buffering under future climate extremes.

Remedy: Choose the No Action Alternative. Amend the Forest Plan to take a hard look at the science of climate change. Prepare an EIS for this project if the FS still wants to pursue it, which includes an analysis that examines climate change in the context of project activities and Desired Conditions. We also would welcome, finally, an EIS on the entirety of U.S. Government climate policies.

FIRE ECOLOGY AND FIRE REGIME

There's nothing in the Fire and Fuels Specialist Report or in the Old Growth Effects Analysis document[1] that suggests the categorization of forest types in the project are anything but those experiencing infrequent fire that are on the cooler, wetter, naturally dense forest side. 61% are fire regimes IV-V and almost all the rest are III-IV, according to the Fire and Fuels Specialist Report.

The Forest Plan FEIS states, "Mixed-severity fires kill a moderate amount of the overstory tree canopy, but do not replace the whole stand." This misrepresents mixed severity fire regimes, which by definition have a mosaic effect including unburned, lightly burned, and severely burned patches within the fire perimeter. DellaSala and Hanson (2015) state:

> Along with the surge in scientific investigation into historical fire regimes over the past 10-15 years has come enhanced understanding of the naturalness and ecological importance of mixed- and high-severity fire in many forest and shrub ecosystems. Contrary to the historical assumption that higher-severity fire is inherently unnatural and ecologically damaging, mounting evidence suggests otherwise. Ecologists now conclude that in vegetation types with mixed- and high-severity fire regimes, fire-mediated age-class diversity is essential to the full complement of native biodiversity and fosters ecological resilience and integrity in montane forests of North America (Hutto, 1995, 2008; Swanson et al., 2011; Bond et al., 2012; Williams and Baker, 2012a; DellaSala et al., 2014). Ecological resilience is essentially the opposite of "engineering resilience," which pertains to the suppression of natural disturbance to achieve stasis and control of resources (Thompson et al., 2009). Ecological resilience is the ability to ultimately return to

[1] There is no Silviculture or similar report in the online project files.

> predisturbance vegetation types after a natural disturbance, including higher- severity fire. This sort of dynamic equilibrium, where a varied spectrum of succession stages is present across the larger landscape, tends to maintain the full complement of native biodiversity on the landscape (Thompson et al., 2009).
>
> …As discussed above, in mixed-severity fire regimes, higher-severity fire occurs as patches in a mosaic of fire effects (Williams and Baker, 2012a; Baker, 2014). In conifer forests of North America, higher-severity fire patches create a habitat type, known as complex early seral forest (DellaSala et al., 2014), that supports levels of native biodiversity, species richness, and wildlife abundance that are generally comparable to, or even higher than, those in unburned old forest (Raphael et al., 1987; Hutto, 1995; Schieck and Song, 2006; Haney et al., 2008; Donato et al., 2009; Burnett et al., 2010; Malison and Baxter, 2010; Sestrich et al., 2011; Swanson et al., 2011; DellaSala et al., 2014). Many rare, imperiled, and declining wildlife species depend on this habitat (Hutto, 1995, 2008; Kotliar et al., 2002; Conway and Kirkpatrick, 2007; Hanson and North, 2008; Bond et al., 2009; Buchalski et al., 2013; Hanson, 2013, 2014; Rota, 2013; Siegel et al., 2013; DellaSala et al., 2014; Baker, 2015; see also Chapters 2–6). The scientific literature reveals the naturalness and ecological importance of multiple age classes and successional stages following higher-severity fire, as well as the common and typical occurrence of natural forest regeneration after such fire (Shatford et al., 2007; Donato et al., 2009; Crotteau et al., 2013; Cocking et al., 2014; Odion et al., 2014). These and other studies suggest that mixed-severity fire, including higher-severity fire patches, is part of the intrinsic ecology of these forests and has been shaping fire- dependent biodiversity and diverse landscapes for millennia.

Also, Odion et al. (2014) state:

> We compiled landscape-scale evidence of historical fire severity patterns in the ponderosa pine and mixed-conifer forests from published literature sources and stand ages available from the Forest Inventory and Analysis program in the USA. The consensus from this evidence is that the traditional reference conditions of low-severity fire regimes are inaccurate for most forests of western North America. Instead, most forests appear to have been characterized by mixed-severity fire that included ecologically significant amounts of weather-driven, high-severity fire. …(C)urrent attempts to ‘‘restore’’ forests to open, low-severity fire conditions may not align with historical reference conditions in most ponderosa pine and mixed-conifer forests of western North America.

The more area into which the Granite Fuels project accomplishes its “desired conditions”, the more artificial it would be. The FS wants old and mature forests to less dense than natural, and also desires (without clearly saying it) larger open areas so more elk forage would exist for a few years. Yet this means prescribed fire would have to be the continuous (not 10-year) management regime, or else it would naturally revert back to existing conditions.

The Old Growth Effects Analysis document essentially agrees with our assertions, in recognizing that prescribed fire would basically just destroy the old growth. This strongly implies prescribed

fire would disrupt the rest of the forest on a trajectory towards old growth, which is much of the non-old growth in the project area.

The analysis of the No-Action alternative is skewed against the reality that a natural fire regime may not be all that great for elk over long durations, but perhaps for shorter durations after fire finally happens. No Action would not be wasteful of taxpayer dollars and less intrusive for other species and components of this mixed-severity fire regime ecosystem, which would experience high-severity fire sooner or later if embraced as the wiser wildland fire management. The FS wants to dominate nature, but ultimately cannot, and the result of its repeated attempts would be unintended but significant chronic degradation.

Baker et al., 2023 is new scientific information addressing agency bias in explaining fire ecology. The Abstract states:

> The structure and fire regime of pre-industrial (historical) dry forests over ~26 million ha of the western USA is of growing importance because wildfires are increasing and spilling over into communities. Management is guided by current conditions relative to the historical range of variability (HRV). Two models of HRV, with different implications, have been debated since the 1990s in a complex series of papers, replies, and rebuttals. The "low-severity" model is that dry forests were relatively uniform, low in tree density, and dominated by low- to moderate-severity fires; the "mixed-severity" model is that dry forests were heterogeneous, with both low and high tree densities and a mixture of fire severities. Here, we simply rebut evidence in the low-severity model's latest review, including its 37 critiques of the mixed-severity model. A central finding of high-severity fire recently exceeding its historical rates was not supported by evidence in the review itself. A large body of published evidence supporting the mixed-severity model was omitted. These included numerous direct observations by early scientists, early forest atlases, early newspaper accounts, early oblique and aerial photographs, seven paleo-charcoal reconstructions, ≥18 tree-ring reconstructions, 15 land survey reconstructions, and analysis of forest inventory data. Our rebuttal shows that evidence omitted in the review left a falsification of the scientific record, with significant land management implications. The low-severity model is rejected and mixed-severity model is supported by the corrected body of scientific evidence.

Meddens, et al., 2018 discuss fire refugia, not considered in IPNF project or programmatic planning:

- Fire is a global disturbance process that interacts with landscape pattern to create mosaics of ecosystem effects, including patches that remain both unburned and only minimally affected by low-intensity burning. These patches are increasingly of interest to ecologists and are often referred to as fire refugia (Kolden et al. 2012, Robinson et al. 2013, Krawchuk et al. 2016).

- The term *fire refugia* has various definitions (e.g., Gill 1975, Camp et al. 1997, Mackey et al. 2002, Krawchuk et al. 2016), all of which focus on the idea of locations disturbed less frequently or less severely by wildfire relative to the surrounding vegetation matrix.

Fire refugia provide habitat for individuals or populations in which they can survive fire, in which they can persist in the postfire environment, and from which they can disperse into the higher-severity burned landscape (Robinson et al. 2013). In this way, fire refugia can function similarly to islands in a biogeographic context, particularly in severely burned areas, recognizing that the matrix of burned areas still provides some habitat to many taxa. Mosaics of fire effects spanning the full range of burn severity—including refugial patches—influence succession, ecosystem processes, and the distribution of biological legacies (Franklin et al. 2000, Turner 2010, Johnstone et al. 2016). Locations in which biota survive fire have been shown to strongly influence postfire recovery and ecosystem dynamics (e.g., Haire and McGarigal 2010, Robinson et al. 2013, Stevens-Rumann et al. 2017). Uniquely, however, fire refugia are not purely ecological or biophysical phenomena; they are also a socioecological construct—for example, because of human manipulation of vegetative fuels and fire suppression activities that can both facilitate and impede their formation.

- Fire refugia are defined and characterized variably in the literature. Other terms used to describe them include *unburned islands*, *habitat refugia*, *remnants*, *residual vegetation*, *fire shadows*, *skips*, *stringers*, *refuges*, *islands*, *biological legacies*, and *late-successional forest.*

- Climate-change refugia have been defined as "areas relatively buffered from contemporary climate change that allow for habitat stability and species persistence over time" (Morelli et al. 2016). However, climate refugia identified for conservation and management purposes require that these areas also be buffered from severe disturbance events if they are to function as holdouts within a changing environment. Accordingly, fire refugia are a necessary complement to climate change refugia in fire-prone landscapes.

- To meet regulatory mandates to preserve such species under global change, however, habitat requirements must be embedded in more comprehensive landscape processes that facilitate specific ecosystem functions, particularly when multiple management objectives must be met.

- Over multiple fire-return intervals, fire refugia that last through only a single fire event are defined in the present article as *ephemeral*, whereas refugia that survive through multiple fires are defined as *persistent* refugia.

- (P)ersistent fire refugia are those that remained intact through multiple fire events (including reburns; Prichard et al. 2017), and this persistence suggests that they are more likely to be predictably associated with stable landscape features.

- Persistent fire refugia may also be more vulnerable to losses associated with anthropogenic climate change and changing fire regimes (Kolden et al. 2017), because the climatic conditions that previously sustained persistent refugia may give way to conditions that support and facilitate fire spread into a previously persistent patch. This

novel introduction or reintroduction of fire would have considerable implications for ecosystems that have been dependent on such refugia.

- Remnant vegetation following fire provides functional habitat and other crucial ecological functions days to months after fire. Refugia can supply food resources (Schwilk and Keeley 1998, Henriques et al. 2000) that are otherwise consumed by fire in the surrounding landscape, provide cover or protection from predators, or reduce influences from exposure to abiotic stressors (e.g., wind and solar radiation). Competition within refugia may increase from before to after a fire, because of decreases in available resources in the surrounding burned landscape (Banks et al. 2012). In addition, these refugia can function as buffers against erosion and landslides that can occur following fires (Shakesby and Doerr 2006), mediating detrimental habitat loss.

- There is a crucial need to prioritize fire refugia for conservation and management under global change. The fire refugia taxonomic dichotomies presented in the present article provide a framework to consider conservation values and potential trends in fire refugia characteristics. Understanding the distribution, abundance, composition, and function of fire refugia may help in prioritizing land management activities on the basis of the concepts of resistance and resilience to fire and of the vulnerability to further disturbances. This prioritization will likely require a comprehensive understanding of both the spatial and the temporal predictors of refugia, integrated with conservation needs and policy limitations.

- Because fire activity is projected to increase under future climate scenarios, fire refugia will likely be important to preserving ecosystem resiliency for a variety of taxa (tables S1 and S2). Therefore, future management actions should focus on identifying, maintaining, or promoting fire refugia within landscapes holistically. For example, the actual locations of ephemeral fire refugia may be less important than their aggregate area and their spatial configuration. On the other hand, understanding the location and environmental determinants of predictable, persistent, and semipersistent fire refugia may be vital for increasing the resilience of both natural and human-occupied landscapes (Smith et al. 2016).

- (O)ne management strategy that would have clear positive outcomes for conserving fire refugia could be reducing the use of backfires and burnouts (or "blackout burning") as wildfire suppression tactics where feasible. During large fire events, firefighters routinely use firing operations to consume available fuel ahead of an advancing fire front; as the flaming front passes or reaches containment lines, they subsequently burn out any remnant green vegetation (i.e., fire refugia) to reduce the potential for flare-ups and ember-ignited spot fires across the containment line. Although this operation tactic is highly effective for protecting crucial infrastructure and resources, it may not be necessary to achieve containment on fires that are remote or being managed to meet natural resource objectives.

Camp, et al., 1997 add, "Locating probable sites of historical fire refugia across a landscape will assist managers in determining an appropriate level of late-successional connectivity.

Connectivity is a term that describes the connectedness or spatially continuity of a patch type (Merriam, 1984). It has been stated that, without connectivity, disjunct patches may not function as habitat (Harris, 1985: Noss and Harris, 1986)."

Remedy: Select the No Action Alternative. Let nature be the primary determiner of this rather ecologically intact roadless area, which has worked for wildlife quite well down through the centuries.

SOIL PRODUCTIVITY

Remedy: Select the No Action Alternative. Otherwise, prepare an EIS that addresses the analytical and scientific issues we raised in our EA comments on this subject.

NOXIOUS WEEDS

Remedy: Select the No Action Alternative. Otherwise, prepare an EIS that addresses the analytical and scientific issues identified in EA comments on this subject.

OLD GROWTH

Along with our comments on the EA, we also raise the fact that repeatedly burning the project area does not assure this part of the IPNF will remain on the trajectory towards old growth as it is without the prescribed fire. Although the EA indicates old growth is categorized in a "no ignition" zone it doesn't guarantee the prescribed burning activities won't degrade the habitat with fuel breaks or fires that burn farther than intended.

We incorporate Juel (2021) within this objection, to bring into this discussion the best available science it cites, along with discussion of other values this EA neglects.

Remedy: Select the No Action Alternative. Otherwise, prepare an EIS that addresses the analytical and scientific issues we raise on this subject.

ELK AND OTHER BIG GAME SPECIES

The EA pretends that helicopters dropping fire bombs, the fire crews on the ground, the fires themselves, the smoke, etc. have no effect on elk security as defined by the RFP. The EA cannot demonstrate consistency with Forest Plan direction such as guideline FW-GDL-WL-13 which states, "Management activities in elk management units should **maintain existing levels of elk security** (see glossary). Where possible, management activities in high and medium priority elk management units (determined in cooperation with Idaho Department of Fish and Game; see FW-DC-WL-17) should improve elk security." (Emphasis added.) The RFP Glossary says "The effects of non-motorized use... would instead be analyzed separately **at the project level** (emphasis added)."

And the EA and Wildlife Report fail to address Forest Plan guideline FW-GDL-WL-14: "Management activities should avoid or minimize disturbance to native ungulates during the birthing/parturition period."

Remedy: Select the No Action alternative. Alternatively, prepare an EIS that addresses the legal, scientific and analytical deficiencies identified in our EA comments and in above discussions.

GRIZZLY BEAR

The EA claims, "There has been only one documented grizzly bear sighting within the project area; it is unlikely that grizzly bears would be in the project area during implementation and if present, would be expected to remain transients through the project area." It is biological nonsense to compare a grizzly bear making its way into this relatively secure, roadless project area with an illegal migrant. Hertel et al. (2019) explain that these "explorer bears" are important to connectivity and persistence of the species. It is equally nonsense to project that, over the 10-year implementation of this burning project, it is unlikely that grizzly bears would be present.

One of the main factors hindering grizzly bear recovery is the lack of connectivity between recovery zones due to degraded habitat conditions caused by a variety of factors, but especially roads. Roads can increase risk of mortality, change bear behavior, resulting in habitat loss, habitat alteration, habitat displacement, habitat fragmentation, and population fragmentation. (Proctor, et al. 2019; MacHutchon & Proctor 2015.) Roads change wildlife habitat in more extreme and permanent ways than other anthropogenic causes of fragmentation. (Forman & Alexander 1998; Spellerberg 1998.) Roads not only cause striking changes to physical landscapes but also alter the ecosystem's general function and the patterns of wildlife use within these landscapes. (Reed et al. 1996; Transportation Research Board 1997; Shirvani et al. 2020.) Traffic on roads can create barriers or filters to animal movement and in some cases the leading cause of animal mortality. (Chruszcz et al. 2003; Clevenger & Wierzchowski 2006; Northrup et al. 2012.) Increased human use on new roads, including legal use during project implementation and illegal public use after project implementation, creates the potential for increased mortality and poaching of grizzly bears. This is why the mostly roadless project area is so important for grizzly bear recovery, which the EA fails to recognize.

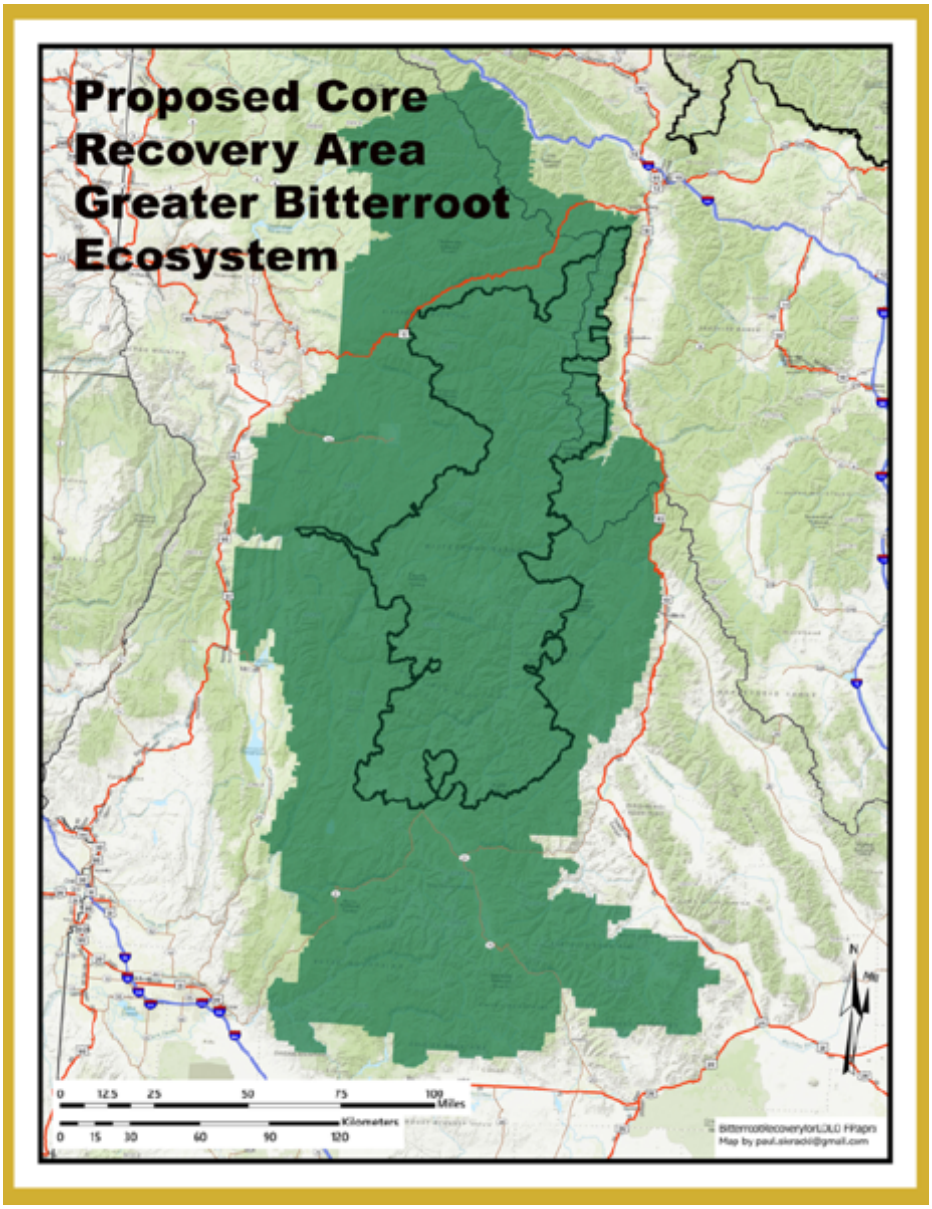
Roads and human activity can negatively impact grizzly bear recovery. (Lamb et al. 2018.) Therefore, Proctor, et al. 2019 conclude:

> Motorized access management would be most beneficial in threatened populations, in areas where roads occur in the highest quality habitats, within and adjacent to identified linkage areas between population units, and in areas that are expected to exceed motorized route thresholds as a result of resource extraction activities.

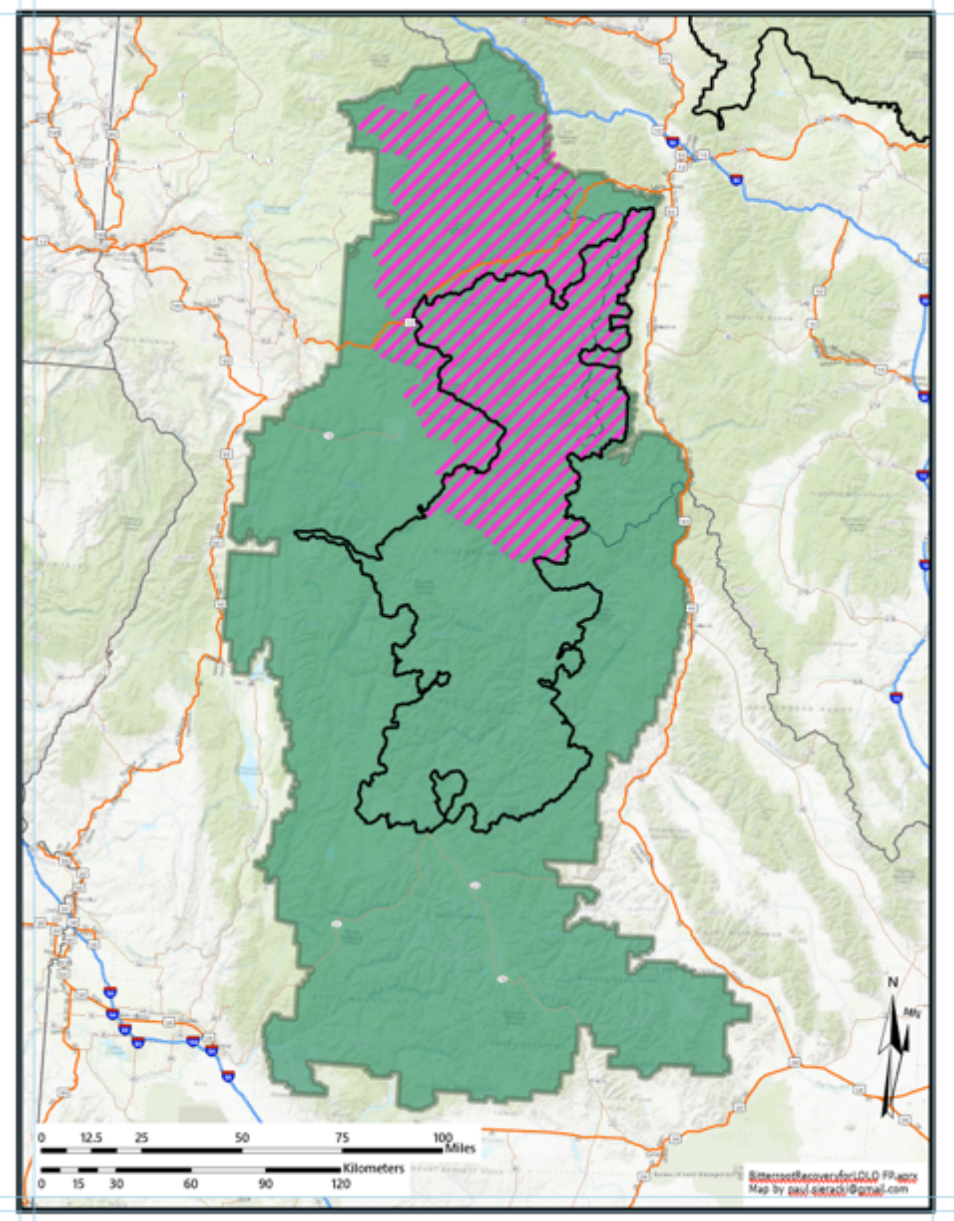
Displacing grizzly bears from a secure area would further reduce grizzly bear connectivity and hinder population recovery into the Bitterroot Ecosystem (BE), a Recovery Zone (RZ) identified by the recovery plan. The EA fails to analyze how the proposed actions would affect grizzly bear habitat security and areas of demographic connectivity, such as discussed in Sieracki & Bader, 2022. Such an analysis requires discrete geographic parameters in which to measure habitat

security, and motorized route densities. Yet, specific bear management units have yet to be identified in the St. Joe Ranger District by any federal or state wildlife agency. See, e.g. the Sieracki & Bader report, which identifies and displays Bear Management Units (BMUs) throughout the Bitterroot National Forest and Lolo National Forest and parts of the Beaverhead-Deerlodge National Forest. Proposed BMUs for the BE (Mattson 2021) and the secure habitat identified in Sieracki & Bader, 2022 provide a foundation for a more robust grizzly bear analysis both within the project area and considering cumulative effects on demographic connectivity.

We advocate for inclusion of biophysically suitable grizzly bear habitats beyond the Recovery Zone to be more scientifically consistent with the ecology of grizzly bears as a better conceptualization of the "Bitterroot Ecosystem" (BE). Example BE boundaries include as suggested by Bader and Sieracki, 2024 (see below, which is identical to that in Alternative 4 in the 2000 Grizzly Bear EIS). The more traditional conceptualization of Recovery Zone boundary is shown in black:



Next we show the same boundaries with the boundaries from FEIS Alternative 2 (Natural Recovery) from the USFWS's 2000 Recovery Plan displayed in diagonal. That FEIS Alternative 2 area was identical to the Recovery Area in the 1993 Grizzly Bear Recovery Plan.



Next we show the map of "Recovery Zone and Linkage Corridor for Alternative 4 - Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration" from the 2000 Recovery Plan:

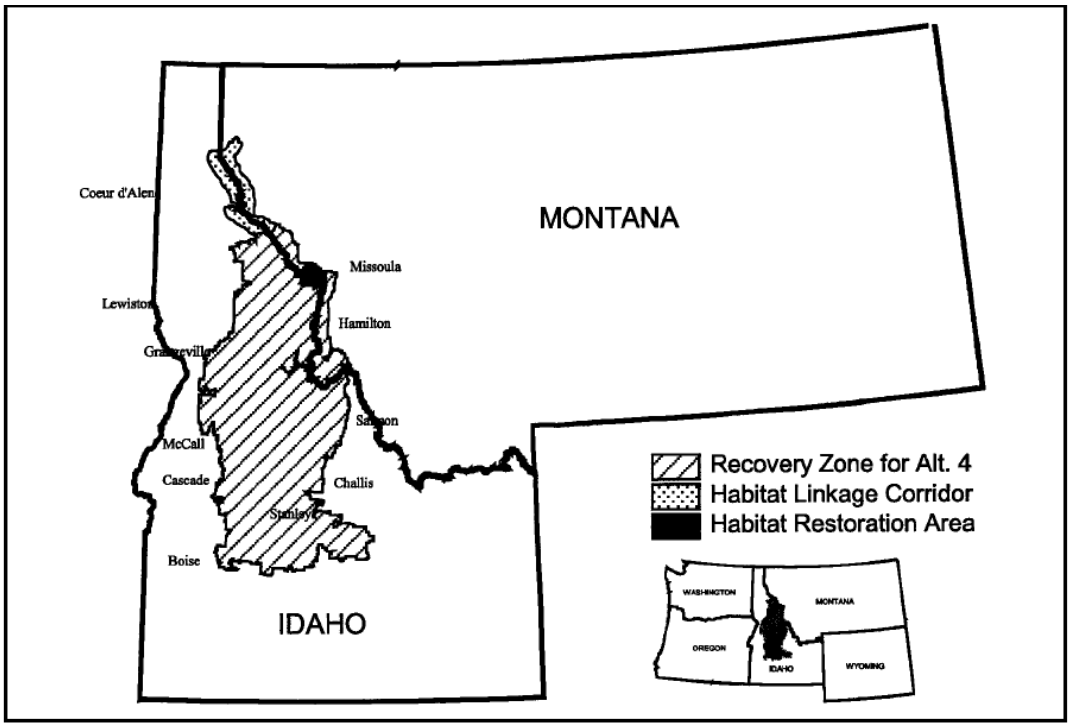


Figure S-5. Bitterroot Grizzly Bear Recovery Zone and Linkage Corridor for Alternative 4 - *Restoration of Grizzly Bears as a Threatened Population with Full Protection of the ESA and Habitat Restoration.*

Sells et al. (2023) is another example of BE delineation uncertainty, conceptualizing the boundaries: "The BE recovery zone boundary was a combination of the recovery zone boundaries identified in alternatives 1 (reintroduction) and 2 (natural recolonization) of the reintroduction plan for the BE (USFWS, 2000)." Below is a partial snip of their Figure 1:

Bader and Sieracki (2022) "predicted 21,091 km^2 of suitable denning habitats" in the BE and connection areas, noting:

> Terrain features, distance to roads, and land cover best explained suitable denning habitats in northern Idaho and western Montana. The results support the demographic model for population connectivity, and independent of other factors there is suitable denning habitat for hundreds of Grizzly Bears in the Bitterroot analysis area. We suggest additions to the Bitterroot Grizzly Bear Recovery Area, and that more effective motorized-access management be applied to demographic connectivity areas.

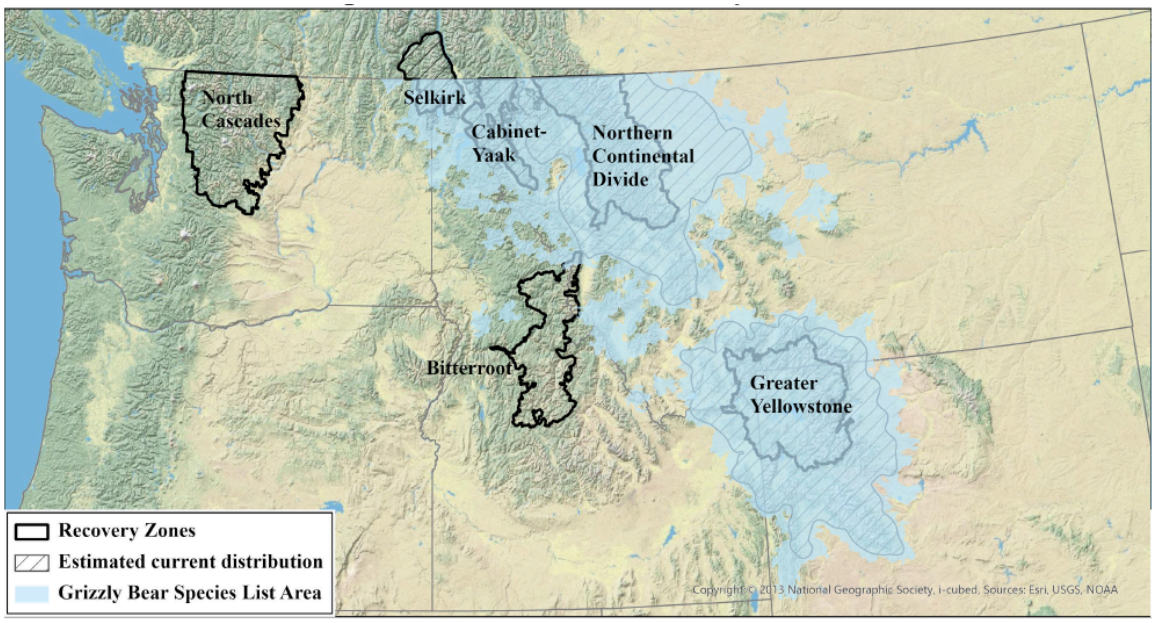
Merrill et al. (1999), Mattson (2021), Sieracki and Bader (2022), Bader and Sieracki (2022), Sells et al. (2023) and Bader and Sieracki (2024) provide the foundation for the kind of robust grizzly bear analysis of the BE and for considering cumulative effects on demographic connectivity. The FS arbitrarily omits incorporation of demographic connectivity areas (DCAs) and likewise omits implementation of the BORZ concept (bears outside of the recovery zone) between the BE/RZ and other recovery areas, precluding standards and guidelines restraining management actions that would better foster natural recovery for the BE.

The USFWS's 2022 Species Status Assessment for the Grizzly Bear (Ursus arctos horribilis) in the Lower-48 States finds that the grizzly bear population in the lower 48 states is likely to become in danger of extinction within the foreseeable future throughout all of its range, and that "viability for the grizzly bear in the lower-48 States as a whole only increases under …future scenarios, which rely on increases in conservation efforts such that the [Bitterroot Ecosystem] and North Cascades support resilient populations." In other words, true recovery of the Threatened grizzly population cannot happen without recovery of a robust population in the BE, which is facilitated by the high quality connectivity habitat found in the Granite Fuels project area.

Merrill, et al., 1999 identify seasonal productive grizzly bear habitats in Idaho. The authors state that grizzly bears have good chances of surviving and reproducing in the BE "if bears in central Idaho are accorded protection from direct mortality comparable to that provided bears in other recovery areas."

Hertel et al. (2019) discovered that explorer bears are important to connectivity and persistence of the species: "Bolder individuals seem to be more tolerant towards human encroachment and move more easily through human-modified landscapes…" which has implications for dispersal and population connectivity. Grizzly bears that find their way into areas not densely occupied, or thought to be otherwise unoccupied, are highly important and should be recognized as resident. Yet the FS considers such grizzlies as "transients" instead of the natural agents of population recovery they really are.

In July 2022 the USFWS updated the species list area map of where grizzly bears "may be present." Below is that "May Be Present" map. The map shows areas in light blue of known recent documentation of grizzly bears.



On March 15, 2023 in *AWR v. Cooley* a U.S. District court in Montana ordered the USFWS to re-analyze the recovery of grizzly bears in the BE. The Court recognized non-discretionary legally binding commitments made in the 2000 Record of Decision and Final Rule, plus the USFWS's failure to manage accordingly. The Judge recognized that "as recently as October 2022, grizzly bears have been seen in the Bitterroot Ecosystem." The Judge's order requires the USFWS to supplement its 2000 Final EIS and come up with a new decision.

The FS should be identifying key habitat components for grizzly bears for prioritizing road density reductions (Proctor, et al., 2020) so populations can recover.

Schwartz et al. (2010) noted that management for grizzly bears requires provisions for security areas and limits of road densities between security areas. Otherwise, grizzly bear mortality risks will be high as bears attempt to move across highly roaded landscapes to other security areas. The Forest Plan lacks direction regarding road densities located outside of and between security areas.

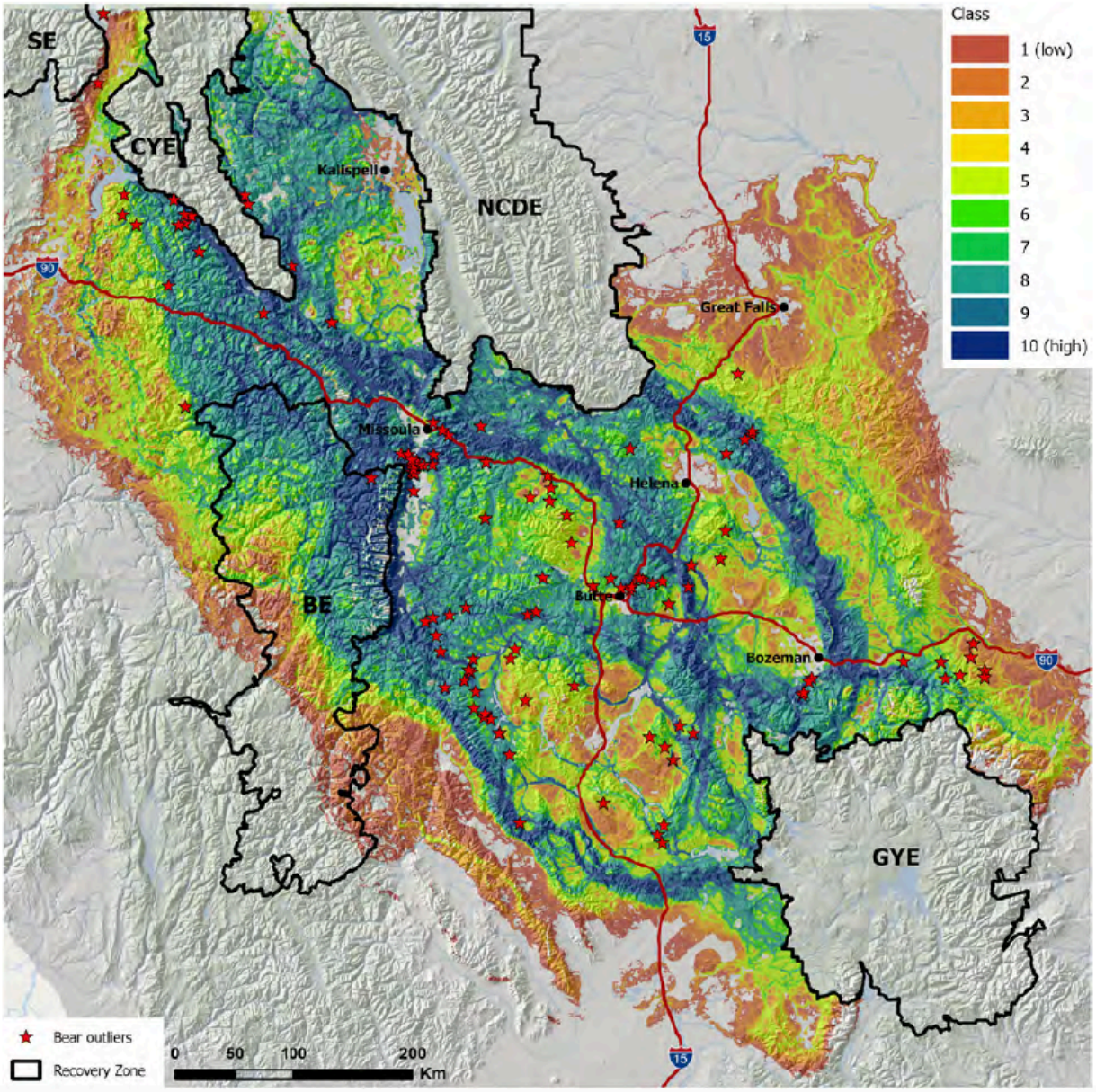
Mattson (2021) investigates grizzly bear recovery in the BE and Nez Perce-Clearwater National Forests (NPCNF). Mattson discusses road densities and core security in proposed BMUs for the NPCNF[2], which would help facilitate grizzly bear recovery in the BE. As Mattson (2021) explains, grizzly bear habitat quality in the BE is potentially outstanding, but strong steps are needed immediately to remove the human impediments to natural recovery. Recovery of the overall grizzly bear population in the lower 48 states requires its population to grow and its range expand, especially in anticipation of the impending risk of climate change.

The FS is aware of the most protective programmatic agency direction it has adopted to date, that established by Flathead Forest Plan Amendment 19 (USDA Forest Service, 1995c). It established

[2] The NPCNF borders the project area and includes a portion of the Mallard-Larkins Recommended Wilderness, although one wouldn't know it because of the lack of disclosure in the EA.

Open Motorized Route Density (OMRD)/Total Motorized Route Density (TMRD)/Security Core indices, based upon the scientific information concerning security from roads and road density requirements for grizzly bears as found in Mace and Manley, 1993 and Mace et al., 1996. Similarly, also see USDA Forest Service, 2009d (programmatic direction for the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones).]

Sells et al. (2023) sought to "identify important movement routes and habitat linkage areas between grizzly bear ecosystems " i.e., "to identify potential dispersal pathways among ecosystems." Results of their modeling yielded linking zones as identified in maps. For example, their Figure 3 for predicted female grizzly dispersal from the NCDE into the BE is displayed next:



The 12/19/2024 Wildlife Report/Biological Evaluation (BE) states, "The Draft Granite Fuels Biological Assessment has been submitted to the Services for review. …Threatened species (Canada Lynx, North American Wolverine, and Grizzly Bear) are **analyzed in greater detail** within the project Biological Assessment."

The BE and EA conclude "not likely to adversely affect" (NLAA) for the grizzly bear, but they both disclose impacts that would constitute "take" (ESA) and therefore NLAA is arbitrary and capricious. Furthermore, we are unable to access the FS's Draft Biological Assessment since it is not on the project website. The FS violates NEPA by withholding its detailed analysis of project effects on this Threatened species.

Bader and Sieracki (2024) apply recently published research on female grizzly bear habitat connectivity and potential routes to the BE to estimate the likelihood of female grizzly bears reaching the BE within the next decade. The report estimates the contiguous Northern Continental Divide Ecosystem (NCDE) population range could expand six miles into the BE within 5 years, and after 15 years move 18-25 miles. This begins to biologically invalidate federal agencies' current geographical separation of the NCDE and the BE.

The USFWS 2011 Grizzly Bear 5-Year Review includes an "Overview of the DPS Policy Relative to Lower-48 Listing." The relevant criteria it used is, "a vertebrate taxon may be considered discrete if it …is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors (quantitative measures of genetic or morphological discontinuity may provide evidence of this separation)…" This argues that the unit of grizzly bear recovery is now the entire lower 48 states DPS.

There exists a false narrative in regards to overall lower 48 states grizzly bear populations, a set of propaganda pushing the notion that grizzly bear populations are, and have been, growing substantially in recent years. Mattson (2017a) and Mattson (2017b) discuss the fallacies of reasoning and the political agendas, disputing this notion of a significantly expanding grizzly bear population.

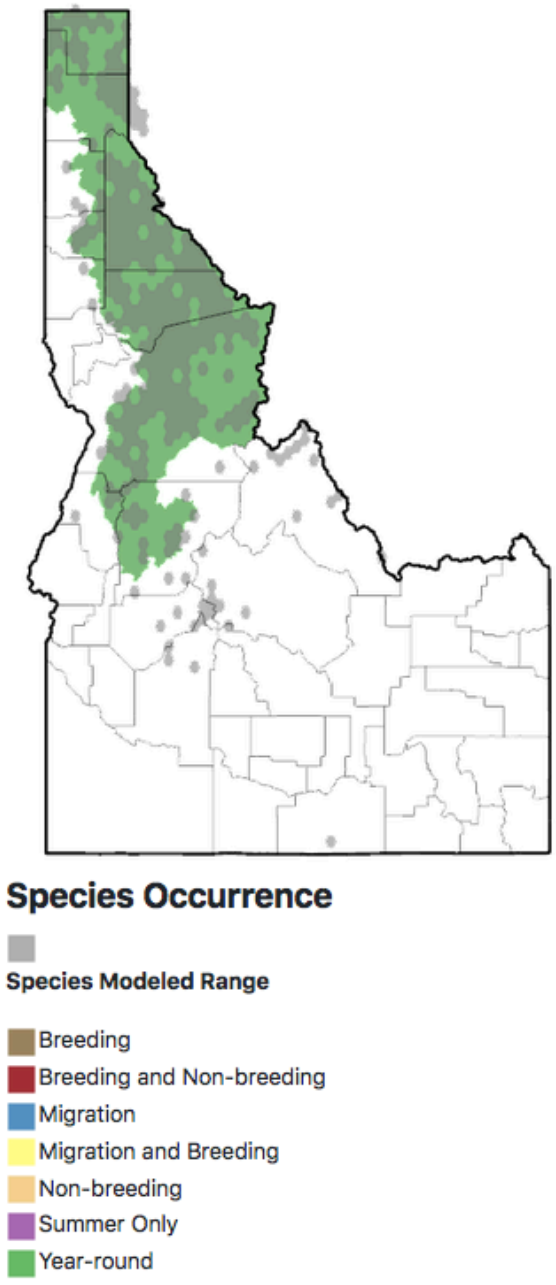
Mattson (2019) provides plausible explanations for grizzly bear movements that are not, as the EA claims "transients" nor support the notion that grizzly bear populations are growing. Rather, factors such as climate change, berry crop/food failures over the period of years, and other habitat change factors might explain why grizzly bears have been seen in areas they've not been documented in decades or longer. Those factors—not improvements in habitat connectivity or population increases—may easily be why documented occurrence of grizzly bears has increased in and around the Granite Fuels project area and BE in recent years. The above mentioned Mattson Declaration also discusses "Increases in distribution cannot be explained solely by increases in bear numbers." In sum, changes in conditions within longer-established grizzly bear populations may be leading to fewer bears in those areas because some are forced to find more favorable conditions by migrating out.

With the recent rulemaking reinforcing the grizzly bear's status as Threatened and recognizing a single DPS including most of Idaho and the IPNF, the FS must undertake programmatic consultation with the USFWS.

Remedy: Select the No Action alternative.

FISHER

The Idaho Department of Fish and Game acknowledges verified sightings of fisher, including in Shoshone County (https://idfg.idaho.gov/species/taxa/18029). Below is a map displayed on that webpage as of 2-14-2025:



The IPNF (USDA Forest Service, 1999a) states: "Hudson Bay trapping records indicate that furbearers, including these two species, were trapped in the area, particularly in the northern

portion of the Coeur d'Alenes. It would be reasonable to infer the numbers of animals were greater than what occurs currently given the number of records within the last 10 years in the Geographic Assessment area." Also, "Extensive alteration of forest structure as a result of natural and human-caused disturbances (i.e. reduction in canopy closure, snags, old growth, and down woody material) has altered the habitat value for fisher and marten." (Id.) Also, "Analysis of the fisher reflects changes in habitat for the marten, since their habitat needs are similar." (Id.)

The IPNF has recognized the impacts of past management actions on the Forest have been in fact significant: "Based on past reductions of suitable habitat and security, the cumulative effects would be considered high." (USDA Forest Service, 1999a) This conclusion was reached even though action alternatives analyzed "would result in a minor reduction of security and suitable fisher habitat." (Id.)

The FS expresses the importance of the NPCNF and IPNF as vital for supporting fisher viability:

> The Nez Perce-Clearwater National Forests and southern Idaho Panhandle National Forests are **the primary areas that support fisher in the U.S. Forest Service Northern Region** (Raley, Lofroth, Truex, Yaeger, & Higley, 2012) (personal communication Sauder 2013, personal communication Schwartz 2013). … Fishers are associated with areas of high cover and structural complexity in large tracts of mature and old-growth forests (Powell & Zielinski, 1994; Sauder & Rachlow, 2014; Schwartz, DeCesare, Jimenez, Copeland, & Melquist, 2013).

(NPCNF RFP Draft EIS, emphasis added.) It also states:

> Fishers are a low-density predator found in mature to late-successional forests with high canopy closure and both live and dead large tree structure. They appear to select areas with higher amounts of coarse woody debris and den in large diameter trees or snags with cavities ((Heinemeyer, 1993; Jeffrey L. Jones, 1991; J. L. Jones & E. O. Garton, 1994; Weir & Harestad, 2003; Weir, Lofroth, & Phinney, 2011). Female fishers use large diameter snags with cavities for denning and have been reported to use a wide variety of tree species.

Also, the Kootenai National Forest (2004) discusses science concerning fisher:

- Jones, 1991: "…fishers did not use non-forested habitats." "It is crucial that preferred resting habitat patches be linked together by closed-canopy forest travel corridors."
- Ruggiero et al. 1994: "...**physical structure of the forest and prey associated with forest structures** are the **critical features** that explain fisher habitat use, **not specific forest types.**
- Thomas, 1995: "**Most habitats preferred by fishers have been described as structurally complex, with multiple canopy layers and abundant ground-level structure (in the form of logs, other downed wood, under-story shrubs, etc**.). Powell and Zielinski (1994) listed three **functions of structural complexity**, which may be important for fishers: high diversity of prey populations, high vulnerability of prey items, and increased availability of dens and rest sites. **Structure also substantially influences**

> **snow accumulation and density**, which have been shown to be important variables in fisher habitat use (Raine 1983, Leonard 1980, Powell and Zielinski 1994)."

(Emphases added.)

"(T)he fisher is unique to North America and is valued by native and nonnative people as an important member of the complex natural communities that comprise the continent's northern forests. Fishers are an important component of the diversity of organisms found in North America, and the mere knowledge of the fisher's existence in natural forest communities is valued by many Americans." (Ruggiero et al., 1994b.)

Research heavily associates fishers with older forests throughout the year. (Aubry et al. 2013, Olsen et al. 2014, Raley et al. 2012, Sauder 2014, Sauder and Rachlow 2014, Wier and Corbould 2010). Fine spatial scales of habitat that fisher need is well-studied. Fishers need dense overhead cover, abundant coarse woody debris, and large trees. (Aubry et al. 2013, Sauder and Rachlow 2014). Female fishers use cavities in large-diameter live trees and snags because tree cavities regulate temperatures and protect kits from predators; "[H]eartwood decay and cavity development is more important to fishers for denning than is the tree species." (Raley et al. 2012.) Research has found that females more often use dens in live trees with decay. Live trees have more regulated thermal properties and stable microclimates, so the temperature fluctuates less and kits are protected from weather extremes. Fishers rest primarily in deformed or deteriorating live trees. (Id.)

Forest patterns are divided into forest composition and forest configuration, and fishers need both. Forest composition is a patch area or proportion of landscape specific to a habitat type. Habitat loss is mostly a change in forest composition. Forest configuration, on the other hand, is spatial and accounts for how patches are arranged across the landscape, like average patch shape, distances between patches of the same type, and the cluster of patches across the landscape. (Sauder and Rachlow 2014.)

Forest configuration figures just as much into the type of habitat that fisher need, specifically the proximity of mature forest patches. Sauder and Rachlow 2014 found that fishers used landscapes with large patches of mature forest arranged in connected patterns. The proximity among mature forest patches was a stronger predictor of fisher use than the mere abundance of mature forest. (Id.)

Most studies have found that fishers are reluctant to stray from forest cover and that they prefer more mesic forests (Olson et al. 2014, Sauder 2014, Sauder and Rachlow 2014, Weir and Corbould 2010). Both Sauder and Rachlow (2014) and Weir and Corbould (2010) predicted the influence of openings on fisher habitat occupancy based on their data. For example, Weir and Corbould predicted that a 5% increase in forest openings would decrease the likelihood of fisher occupancy by 50%. Sauder and Rachlow (2014) suggested that an "increase of open area from 5% to 10% reduces the probability of occupation by fishers by 39%. Sauder and Rachlow (2014) reported that the median amount of open area within fisher home ranges was 5.4%. This was consistent with "results from California where fisher home ranges, on average, contained <5.0% open areas" (Raley et al. 2012). "[R]relatively small changes in the amount of open area in a

landscape can have large effects on the probability of occupation by fishers." Sauder and Rachlow 2014. Indeed, Weir and Corbould (2010) states that the abundance of open areas within a landscape was the most important variable in predicting landscape occupancy by fishers.

Sauder and Rachlow (2014) report the average home range size is approximately 12,200 acres and for a female fisher and approximately 24,300 acres for a male fisher. Home ranges generally do not overlap greatly for the individual sexes (21.3% for females and 15.3% for males), but male home ranges can overlap female home ranges. Preferred habitat would likely occur in upland areas and stands composed of cedar and grand fir forests (Schwartz et al. 2013).

Also Jones, (undated) recognizes:

> Roads are directly correlated with trapper access, and consequently, fisher vulnerability. Even in areas where fishers cannot be legally trapped, trapping pressure for other furbearers (i.e., marten) may contribute significantly to fisher mortality. Roads bisecting or adjacent to preferred habitats (i.e., drainage bottoms) have the greatest potential of increasing a trapper's probability of encountering fishers."

And Witmer et al., 1998 state, "The range and population levels of the fisher have declined substantially in the past century, primarily the result of trapping pressure and habitat alteration through logging (Powell and Zielinski 1994)."

Heinemeyer and Jones, 1994 state,

> Fishers are susceptible to trapping, and are frequently caught in sets for other furbearers. Additionally, populations are vulnerable to trapping, as even light pressure may cause local extinction. Western fisher populations may have lower natality and higher natural mortality rates as compared to eastern populations. Consequently, western populations may be more susceptible to over-trapping. It has been suggested that incidental captures may limit population growth in some areas.

Ruggiero et al.,1994b discuss fisher habitat disruption by human presence:

> …The fisher's reaction to humans in all of these interactions is usually one of avoidance. Even though mustelids appear to be curious by nature and in some instances fishers may associate with humans (W. Zielinski, pers. obs.), they seldom linger when they become aware of the immediate presence of a human. In this regard, fishers generally are more common where the density of humans is low and human disturbance is reduced. Although perhaps not as associated with "wilderness" as the wolverine (V. Banci, Chapter 5), the fisher is usually characterized as a species that avoids humans (Douglas and Strickland 1987; Powell

IDFG has reported that, since 2012, traps set for wolves have caught 56 fisher, 20 of whom died in the traps. *See* IDFG Non-target wolf trapping LICYEAR2013-2019 spreadsheet. The year that the Forest Service drafted the assessment, in the 2013-2014 season, IDFG reported that 22 fisher were trapped that season, 10 of whom died in traps. While the trappers reporting these numbers indicated the balance were released, we don't know if trapping contributed to mortality shortly

thereafter. Also, these are just the numbers reported, so we don't know if there were more unreported, either because trappers chose not to or did not check their traps. While we don't know where this trapping occurred, the Forest Service has recognized that the IPNF contains a lot of fisher habitat, so it follows that at least some of these numbers were likely from this forest. Also, it is very reasonably foreseeable that trapping is going to increase for several reasons. The first reason is that IDFG extended its wolf trapping season, so active traps will exist longer on the landscape, and these season modifications impact the IPNF. *See* IDFG 2020, compare with IDFG hunting units map (2020). The second reason is that trapping depends on access. As discussed above, roads create access for trappers.

Remedy: Select the No Action alternative.

WOLVERINE

The 12/19/2024 Wildlife Report/Biological Evaluation (BE) states, "Approximately 71,000 acres or 63 percent of the Granite Fuels project area is modeled as maternal wolverine habitat, with the remainder as primary and female dispersal habitat (Inman et al. 2013 models).

Wolverines are known to use the project area, highlighting this roadless expanse's importance for this Threatened species.

The BE states, "The Draft Granite Fuels Biological Assessment has been submitted to the Services for review. …Threatened species (Canada Lynx, North American Wolverine, and Grizzly Bear) are **analyzed in greater detail** within the project Biological Assessment."

The BE and EA conclude "not likely to adversely affect" (NLAA) for wolverine, but they both disclose impacts that would constitute "take" (ESA) of wolverine and therefore NLAA is arbitrary and capricious. Furthermore, we are unable to access the FS's Draft Biological Assessment since it is not on the project website.

The FS violates NEPA by withholding its detailed analysis of project effects on this Threatened species.

We incorporate Friends of the Clearwater et al.'s submission to the USFWS in response to their request for new information (Federal Register Vol. 87, No. 225, November 23, 2022) to update the Species Status Assessment (SSA) for the North American Wolverine. The USFWS has published a September 2023 Addendum to the SSA, and the FS should take note that USFWS identifies the climate issue as an even greater problem for wolverine that it had previously.

We also incorporate the January 22, 2024 comments on the Proposed 4(D) Rule of the Endangered Species Act for the North American Wolverine by Native Ecosystems Council, Alliance for the Wild Rockies and Council on Wildlife and Fish. We also incorporate the comment letters from Swan View Coalition (1-21-2024) and Friends of the Wild Swan (1-23-2024)

On November 30, 2023 the U.S. Fish and Wildlife Service officially added the species as threatened "for the distinct population segment (DPS) of the North American wolverine (Gulo gulo luscus) occurring in the contiguous United States. This rule adds the contiguous U.S. DPS of the North American wolverine to the Federal List of Endangered and Threatened Wildlife." 88 FR 83726. The FS must provide sufficient analysis to demonstrate how the RFP will conserve the species, accounting for cumulative effects. With the official listing of wolverine as a threatened species, the FS must demonstrate how the RFP contributes to the recovery of threatened wolverine [36 CFR 219.9(b)(1)] and undertake programmatic consultation with the USFWS.

The proposed 4(d) Rule accompanying the Threatened listing, which would exempt many management activities as "take", is not yet finalized.

The 2012 Planning Rule tasks the FS with the duty to determine whether or not the ecological components included in the RFP – including whether the proposed standards, objectives, desired conditions, and guidelines – provide the ecological conditions or site-specific components necessary to "contribute to the recovery" of listed species like wolverine. 36 C.F.R. § 219.9 (b). Recovery means providing the ecological components necessary to improve the status of a listed species to the point at which listing under the Endangered Species Act ("ESA") is no longer appropriate. *Id*. Further, "[i]f the responsible official determines that the plan components required in paragraph (a) are insufficient to provide such ecological conditions, then additional, species-specific plan components, including standards or guidelines, must be included in the plan to provide such ecological conditions in the plan area." *Id.*

This duty to contribute to the recovery of wolverine, therefore, must be the focus of renewed consultation on the RFP and must drive and inform all management decisions concerning the species. Providing for the persistence and survival of wolverine is insufficient; the revised forest plan must go further and provide ecological conditions necessary to "contribute to the recovery" of the species.

The RFP provides inadequate wolverine plan components. Since wolverine have now been designated as a threatened species, it is reasonable to conclude that the RFP's existing condition is not sufficient to conserve wolverine or contribute to their recovery. It is also reasonable to expect that the FS would, in the absence of species-specific plan components, expand the amount of wolverine habitat protections to effectively address threats to the species. Given wolverines are now a threatened species, we expect the severity of those threats would be not only influenced, but measured, by the extent they resulted in a take of the species as defined by the Endangered Species Act. The FS fails to provide such a measure. In fact, there is no threshold defining the amount of maternal and primary habitat necessary to limit factors that would lead to a take of the species. The Granite Fuels BE discloses that the primary adverse motorized impacts are from over-snow vehicles, representing cumulative effects the EA does not adequately consider.

The analysis failed to disclose the amount of habitat protections wolverines would actually need to recover and the existing condition was insufficient to conserve wolverine as they are now listed as a threatened species. As a result of the agency's decisions, the "[f]ormer Hoodoo

Recommended wilderness areas would be within Semi-Primitive Motorized settings and would be suitable for winter motorized uses." (NPCNF LMP FEIS at 973.) This despite the fact that "[t]he analysis recognized that the Hoodoo roadless area contributes the most acres of female wolverine habitat – a critical feature to wolverine success. Concluding that the severity of impacts to wolverine are influenced by winter disturbance in portions of the Hoodoo area." (NPCNF LMP FEIS Appendix M: Response to Comments at 235.)

The FS fails to demonstrate how RFP components provide the necessary ecological integrity to conserve wolverines throughout the planning area, let alone how those components contribute to the recovery of the species.

While the FS has limited ability to address declines in snowpack due to the climate crisis, the agency must account for such declines in its analysis, which it failed to do. Had it done so, then the Forest Service may have been able to identify specific linkage areas to protect, the importance of which is shown in the following explanation:

> New studies in southwestern Canada and the western U.S. have found that wolverine distribution and density are negatively related to road density. In southwestern Canada, consistency of spring snow and road density are the two most important variables correlated with wolverine density (Clevenger 2019, p. 52; Mowat et al. 2020, p. 220). Wolverine population estimates derived from models based on snow and road density predicted that wolverine abundance would be 44% higher without the depressing effect of the road covariate (Clevenger 2019, p. 52; Mowat et al. 2020, p. 220).
> --
> … in southeastern British Columbia, the density of forestry roads that extended into high-elevation wolverine habitat was a strong negative predictor of wolverine distribution in winter, especially for females (Kortello et al. 2019, p. 10). The most likely explanation for this negative relationship is the use of these high-elevation forestry roads by snowmobilers, rather than predator avoidance or trapping pressure (Kortello et al. 2019, p. 10). Other possible explanations are increased trapping access or less abundant food resources near roads (Mowat et al. 2020, p. 224).

(Wolverine SSA Addendum, 2023 (2023 SSA) at 31)

The agency has not explained how areas with winter motorized settings will affect wolverine connectivity, especially as use becomes concentrated due to the anticipated declines in snowpack. Further, even though Idaho does not allow wolverine trapping, and incidental trapping mortalities may be low, it is still important for the RFP to include standards that prohibit trapping wolverine habitat, especially in important linkage areas given the agency's ability to only address non-climate stressors.

The EA and BE do not adequately analyze the direct, indirect or cumulative impacts on wolverine primary, maternal and natal denning habitat from human disturbance, specifically winter recreational activities. Nor does the RFP include the necessary provisions and standards to protect denning habitat (both maternal and natal) from human disturbances. In addition to those analysis deficiencies, the following provides further examples, but are by no means exhaustive.

Trapping

Perhaps due to the proposed 4(d) Rule, the analysis fails to properly account for this threat. Attached herein we provide comments prepared by the Western Environmental Law Center on the FWS's interim 4(d) rule for wolverine (Docket No. FWS-R6-ES-2023-0216) that expands on the threat trapping poses to wolverine recoveryIncluded with those comments is the entire administrative record, some of which is cited in this objection. S*ee* Exhibit C. Notably, these comments explain there are a number of recent studies on the impacts of wolverine trapping on population viability in Canada (where targeted trapping is allowed and where incidental trapping occurs). These studies demonstrate that the current rate of wolverine trapping in southern Canada is unsustainable and that trapping disproportionately impacts younger wolverines that are most likely to constitute the dispersers that the USFWS relies upon to ensure connectivity with the lower-48 population. *See* FWS-0048770–83 (Mowat (2019)); *see also* FWS-0033542–49 (Kukka (2017)). Although the ultimate cause of the lack of connectivity between wolverines in the contiguous United States and wolverines in Canada is not known with certainty, the USFWS previously determined that it may be related to "harvest management in southern Canada." 75 Fed. Reg. at 78,053. These recent findings demonstrate that unsustainable exploitation of wolverines in Canada threatens wolverines in the lower-48 by impeding dispersal of Canadian wolverines across the international border. *Id*. The same is true in the lower 48 States where trapping can undermine wolverine movement and effective migration which is something needed for the long-term viability of the species. An additional concern related to snowmobile use is that motorized access leads to increased trapping pressure (direct or indirect capture) for some furbearers that prefer more mesic habitat conditions generally found at higher elevations or in riparian habitats, such as marten, fisher, lynx, and wolverine. Trapping season for these species is limited to the winter months, and most trappers prefer the relatively easy access to suitable habitat provided by snowmobiles. Wolverine populations in small, isolated mountain ranges can be very susceptible to trapping pressure. Trapping pressure for these species is dramatically reduced if there is less snowmobile access. The RFP, Granite Fuels EA and BE fail to properly acknowledge, analyze or address the threats trapping pose.

Climate Crisis Effects

The FS failed to fully account for the serious threat posed by the climate crisis, especially within the context of winter motorized recreation, and its effects on wolverine recovery. The USFWS provides more context and clarification regarding these threats:

> We expect climate change to exacerbate effects from multi-lane roads, backcountry winter recreation, and human development, all of which could then impact genetic diversity and small population dynamics. 88 FR 83749
> --
> In the 2023 wolverine SSA report addendum, we provide an updated assessment of the effects of winter recreation based on new studies. Research indicates winter recreation is negatively associated with North American wolverine habitat use, and that winter recreation is likely to increase and become more concentrated in the future as snow-covered areas decline due to climate change (Heinemeyer et al. 2019, p. 1). A large

> multi-State analysis of winter recreation impacts in the Northern Rocky Mountains was published in 2019, indicating greater concern for impacts to wolverines than we found in 2018 and showing a negative functional response to the level of recreation exposure within their home ranges (Heinemeyer et al. 2019a, pp. 13–14, 17–18). Additionally, new research found an incremental loss of wolverines in portions of central Idaho where winter recreation impacts are increasing (Mack and Hagan 2022, p. 13). Furthermore, forest roads used by snowmobilers in the Canadian Rockies were found to have a strong negative correlation with wolverine distribution (Kortello et al. 2019, p. 10). Wolverine detection probability in protected and nonprotected habitat of southwestern Canada was found to be strongly and negatively correlated with nonmotorized recreation in summer and winter (Barrueto et al. 2022, p. 5).

88 FR 83729. In comparing the updated wolverine species status assessment with the preferred alternative, it is apparent that the FS understands the importance of the issue explaining:

> While the agency has no authority over climate change, climate change can interact with Forest Service activities to exasperate effects of climate change on wolverines. For example, climate change could interact with winter recreation potentially concentrating winter recreation activities into a smaller intensified areas that would be increasingly important to wolverines in the future.

(Nez Perce-Clearwater NF RFP FEIS at 966-7.) And that FEIS acknowledges the USFWS's findings in the 2023 SSA by noting:

> Core wolverine habitats are projected to become smaller and more fragmented in the future as the result of climate change and human disturbance because climate change is projected to shrink wolverine habitat, increased backcountry winter recreation is likely in shrinking core habitats and human developments could reduce connectivity.

Yet, the FS has not accounted for shrinking wolverine habitat or concentration of uses or adjust the habitat models to include the scarcity of snowpack over the life of the RFP. The USFWS explains:

> Wolverine habitat in the contiguous U.S. is projected to decrease in areas that were modeled and become more fragmented because of climate changes that result in increasing temperatures, earlier spring snowmelt, and loss of deep, persistent spring snowpack, primarily at lower elevations (see Climate Change Effects section above). Winter recreation, which has been shown to negatively influence wolverine behavior, in these diminished habitats may increase as human populations increase (U.S. Forest Service 2016, pp. 12–13, 12–14). In addition, snow-dependent recreation that was formerly distributed over a wider elevation gradient will be constrained to that part of the gradient that contains quality snow into the future.

(2023 SSA at 64.)

Habitat Loss

Heinemeyer et al. (2019) suggested stronger negative responses to winter recreation than previous publications suggested, and the Nez Perce-Clearwater NF RFP FEIS acknowledged that "Female wolverines exhibited a stronger avoidance of off-road motorized recreation and experienced higher indirect habitat loss than male wolverines." Yet, the FS fails to account for how these harmful effects will be exacerbated by concentrated over-snow vehicle use resulting from anticipated decreased snow depths, as we explained above. Where snowmobile use is likely to occur may well shift over the life of the RFP and even during Granite Fuels project implementation, a factor the FS does not sufficiently account for, even though the agency recognizes "Potential for backcountry winter recreation to affect wolverines may increase under climate change if the reduced snowpack concentrates winter recreationists and wolverines in the remaining areas of persistent snow cover." *Id*

"(W)olverines are restricted primarily to the transitional zone between treeline, below which environmental conditions become too warm, and upper elevations of permanent ice and snow where there is insufficient food and cover to support wolverines (Aubry et al. 2023, pp. 13–14)." 2023 SSA at 18. Further, "[t]here is growing evidence that wolverines rely on subnivean space (the environment between snow and terrain) for thermoregulation, to escape predation risk, and/or to cache food (van der Veen et al. 2020, pp. 8–10; Fisher et al. 2022, p. 10)." 88 FR 83748. The FS has not account for the loss or shifting of transition zones or subnivean spaces, nor does it account for OSV use within these areas. In fact, essential sources of wolverine prey reside within the subnivean space. Small mammals that remain active during the winter depend on the insulated space between the snowpack and the ground – the subnivean zone – for winter survival. When snow compaction from snowmobiles occurs, subnivean temperatures decrease, which can lead to increased metabolic rates in these small mammal species, such as voles, shrews, and mice. For example, if the subnivean air space is cooled by as little as 3 degrees Celsius, the metabolic demands of small mammals living in the space would increase by about 25 calories per hour. Through controlled experiments, researchers have demonstrated that compaction due to snowmobile use reduced rodent and shrew use of subnivean habitats to near zero – a decline attributed to direct mortality, not outmigration. Elsewhere, scientists have documented a decline in small mammals following snowmobile activity that compressed the subnivean zone. Because small mammals make up the majority of prey for many species, from raptors to mesocarnivores, habitat changes that affect subnivean populations could cascade through the food chain..

Use of Best Available Science

The best available science reveals that motorized winter recreation poses a threat to wolverine persistence and recovery, in addition to the threats posed by climate change. The cumulative effect of climate change and motorized winter recreation on wolverines is significant. As wolverines lose habitat to the effects of climate change, wolverine and motorized winter recreationists will be forced to share smaller and smaller habitat patches. Decreasing areas with sufficient snow will amplify the effect of motorized winter recreation on wolverine due to the fact that motorized winter recreation will be concentrated in smaller areas. Protected areas in the

proposed action will simply not necessarily provide for all of the wolverine's life history requirements.

The FS must now account for any take of wolverine as defined in the ESA. Factors affecting the wolverine's continued existence include projected decrease and fragmentation of wolverine habitat and range due to climate change, lack of secure habitat allowing for connectivity, trapping, lack of regulatory mechanisms to address the threats to wolverine habitat from climate change, and loss of genetic diversity due to small population size. A recent study expands on these threats explaining:

> Modeling suggests snow in wolverine range in the USA and southern British Columbia will diminish markedly in the coming century (McKelvey et al., 2011a). Projection models based on climate-change scenarios suggest a marked reduction of persistent spring snow in the lower half of inferred denning elevation bands (Barsugli et al., 2020) and across all elevations in currently occupied states (Peacock, 2011) for the USA population.
> ---
> Wolverine ranges in the USA are restricted to mountain environments and are fragmented by developed private lands in valley bottoms. As snowpack decreases through the 21st century wolverine populations are expected to become more fragmented and isolated, especially in the USA (McKelvey et al., 2011a).
> ---
> In the mountain regions of the USA wolverines' close association to snow interacts with backcountry winter recreation. Using simultaneous GPS monitoring of mountain wolverines and winter recreationists, Heinemeyer et al. (2019) showed wolverines avoided otherwise high-quality habitats in areas with higher recreation levels. The strength of avoidance increased with increased recreation, was greater for dispersed off-trail activities, and was greater for motorized than non-motorized recreation (Heinemeyer et al., 2019). As human pressures for recreational space mount, increasing effects on wolverines are expected in protected areas as last bastions of habitat, adding to the list of stressors for future wolverine.

This study bolsters past findings that demonstrate wolverines are sensitive to disturbance from motorized winter recreation activities, and may alter their behavior in response to motorized winter recreation activities. Wolverine may avoid areas where motorized winter recreation activities occur. Disturbance from foot and snowmobile traffic have been purported to cause maternal female wolverines to abandon natal dens and relocate kits to maternal dens.

Snowmobile use commonly overlaps with wolverine denning habitat. Dispersed recreational activities like motorized winter recreation have the potential to negatively impact wolverine by disrupting natal denning areas. Wolverines have one of the lowest successful reproductive rates known to mammals, and this is hypothesized as linked to winter energy constraints. Female wolverines select and enter dens and give birth in February to mid-March and the overlap of winter recreation with this energetically taxing period is highly concerning. Any disturbance during this important winter period can negatively affect productivity and other vital rates.

As noted, researchers have reported that female wolverines may be sensitive to human disturbance in the vicinity of natal and maternal dens, and disturbance from foot and snowmobile traffic has been purported to cause maternal females to abandon or move dens. One study found that females tended to avoid areas with heli-skiing and backcountry skiing areas. Another study found that motorized recreation occurred at higher intensity across a larger footprint than non-motorized recreation in most wolverine home ranges. Female wolverines exhibited stronger avoidance of off-road motorized recreation and experienced higher indirect habitat loss than male wolverines. High-cirque snowmobile use, especially cross-country use and "high marking," may present a substantial threat to wolverines and their habitat.

These behavioral changes can negatively affect individuals' physiological stress levels and reproductive capacity in several ways, as evidenced in numerous studies on different species. It may reduce the amount of time and thus ability of female wolverines to hunt or to utilize food caches. This would result in significant additive energetic effects, reducing foraging success for adult females already stressed by the demands of bearing and raising a litter. In addition, this could reduce kit survival rates by increasing the potential for predation and exposure to cold temperatures. These results indicate that winter recreation may impact wolverines in as yet unknown ways.

As snowmobiling and backcountry skiing continue to grow in popularity and as snowpack continues to decline due to climate change, there is increasing concern that wolverine denning habitat may become limiting. Recent warming has already led to substantial reductions in spring snow cover in the mountains of western North America. Numerous recent and sophisticated studies support the conclusion that climate changes caused by global climate change are likely to negatively affect wolverine habitat. Protection of denning habitat is critical for the persistence of the species.

The RFP fails to include an accurate monitoring program for wolverine

Pursuant to the USFWS's 2012 planning rule, the FS is tasked with developing a monitoring program for land management plans that, among other things, tracks the status of all focal species to assess various ecological conditions, including conditions necessary to "conserve proposed and candidate species" and conditions necessary to "maintain a viable population of each species of conservation concern." 36 C.F.R. § 219.12(a)(5). Such a monitoring program is needed for wolverine but not found in the RFP.

Importantly, wolverine monitoring should test "relevant assumptions" (219.12) associated with the relationship between the forest plan components and wolverine persistence, including assumptions and uncertainty regarding management impacts, particularly motorized recreation, on wolverine persistence. Wolverine monitoring should also be coordinated and integrated with the development of a broad-scale monitoring program for wolverines and other forest carnivores, including lynx and grizzly bears (see 219.12(b)), and should be developed and implemented with key stakeholders (see 219.12(c)(3)). Wolverines should also be considered as a focal species representing the ecological integrity of alpine ecosystems.

Wolverine monitoring, for example, should address and explore the following types of questions: (1) are measurable changes in temperature and precipitation affecting the amount of available snow cover, including persistent spring snow cover, on the IPNF? (2) are measurable changes in temperature and precipitation affecting where and when wolverine den and wolverine persistence in the plan area? (3) what is the relationship between decreases in persistent spring snow, demand for winter motorized recreation, denning success and wolverine persistence? (4) are plan components effectively providing for wolverine movement within and across the forest? (5) is there any indication that human disturbance (and access) is impacting the condition of wolverines on the forest or wolverine denning success on the forest? (6) are plan components effectively providing for wolverine denning and security needs and conserving the species? Human activities, in particular, should be included in terms of wolverine monitoring (via various proxies presumably offered in the biophysical settings).

Remedy:

- Select the No Action alternative.
- Declare all maternal and primary wolverine habitat as unsuitable for winter motorized use, identify wolverine linkage areas that the agency must maintain or restore in order to provide for wolverine connectivity, and develop plan components, including standards providing for habitat security within these linkages. Prohibit trapping within all wolverine habitats.
- Establish a wolverine monitoring program that evaluates whether forest plan components need to be changed to better conserve the wolverine in the planning area.

CANADA LYNX

Our comments on the original EA raise issues the FS's response to comments and updated EA do not adequately address. In addition, we note the 12/19/2024 Wildlife Report/Biological Evaluation (BE) states, "The Draft Granite Fuels Biological Assessment has been submitted to the Services for review. …Threatened species (Canada Lynx, North American Wolverine, and Grizzly Bear) are **analyzed in greater detail** within the project Biological Assessment."

The BE and EA conclude "not likely to adversely affect" (NLAA) for the Canada lynx, but they both disclose impacts that would constitute "take" (ESA) and therefore NLAA is arbitrary and capricious. Furthermore, we are unable to access the FS's Draft Biological Assessment since it is not on the project website.

The FS violates NEPA by withholding its detailed analysis of project effects on this Threatened species.

Remedy: Select the No Action alternative. Undertake formal consultation with the U.S. Fish & Wildlife Service and prepare an EIS that addresses the legal, scientific and analytical deficiencies this objection identifies.

INVENTORIED ROADLESS AREAS AND OTHER UNROADED AREAS

The FS provides no analysis of the Roadless Expanse issue, which is inconsistent with the Region 1 policy found in USDA Forest Service, 2010e.

Remedy: Select the no-action alternative. Otherwise, prepare an EIS for the project, and evaluate the location of roadless area boundaries and analyze and disclose impacts on entire Roadless Expanse.

SCIENTIFIC INTEGRITY

The FS is obligated to consider best available science. Our Objection to the Forest Plan notes that the scientific basis for its standards, guidelines, and other components/direction is not well established. Since this project is tiered to the Forest Plan, then in order to consider best available science the FS must finally explain what science it has considered for all forest plan components/direction.

Many FS analyses rely upon the use of models. The reliability of all the data used as input for these models is not disclosed. Also, the validity of the models was not established for how the FS utilizes them. The FS does not cite the best available scientific information which establishes model validity.

The FS does not disclose the limitations of all models the FS relies upon for the NEPA analyses.

The FS does not disclose the statistical reliability of all data the FS relies upon for the Granite Fuels analysis. Since "an instrument's data must be reliable if they are valid" (Huck, 2000) this means the data that is input to a model must accurately measure that aspect of the world it is claimed to measure, or else the data is invalid for use by that model. Also, Beck and Suring, 2011 "remind practitioners that if available data are poor quality or fail to adequately describe variables critical to the habitat requirements of a species, then only poor quality outputs will result. Thus, obtaining quality input data is paramount in modeling activities." And Larson et al. 2011 state: "Although the presence of sampling error in habitat attribute data gathered in the field is well known, the measurement error associated with remotely sensed data and other GIS databases may not be as widely appreciated."

Huck, 2000 states:

> The basic idea of reliability is summed up by the word consistency. Researchers can and do evaluate the reliability of their instruments from different perspectives, but the basic question that cuts across these various perspectives (and techniques) is always the same: "To what extent can we say the data are consistent?" …(T)he notion of consistency is at the heart of the matter in each case.
>
> …(R)eliability is conceptually and computationally connected to the data produced by the use of a measuring instrument, not to the measuring instrument as it sits on the shelf.

During litigation of a timber sale on the Kootenai NF (CV-02-200-M-LBE, Federal Defendants Response to Motion for Preliminary Injunction), the FS criticized a report provided by plaintiffs, stating "(Its) purported 'statistical analysis' reports no confidence intervals, standard deviations or standard errors in association with its conclusions."

As Huck (2000) states, the issue of "standard deviations or standard errors" that the FS raised in the context of that litigation relates to the reliability of the data, which in turn depends upon how well-trained the data-gatherers are with their measuring tools and measuring methodology. In other words, different measurements of the same phenomenon must result in numbers that are very similar to result in small "standard deviations or standard errors" and thus high reliability coefficients, which in turn provide the public and decisionmakers with an idea of how confident they can be in the conclusions drawn from the data.

Also, the document, "USDA-Objectivity of Statistical and Financial Information" is instructional on this topic.

The next level of scientific integrity is the notion of "validity." So even if FS data input to its models are reliable, a question remains of the models' validity. In other words, are the models scientifically appropriate for the uses for which the FS is utilizing them? As Huck, (2000) explains, the degree of "content validity," or accuracy of the model or methodology is established by utilizing other experts. This, in turn, demonstrates the necessity for utilizing the peer review process.

Model results can be no better than as the data fed into them, which is why data reliability is discussed above. The Ninth Circuit Court of Appeals has declared that the FS must disclose the limitations of its models in order to comply with NEPA. The EA has failed to disclose these limitations. Unfortunately, the FS uses models without any real indication as to how much they truly reflect reality.

In the NPCNF's Clear Creek Integrated Restoration Project FEIS, the FS defines "model" as "a theoretical projection in detail of a possible system of natural resource relationships. A simulation based on an empirical calculation to set potential or outputs of a proposed action or actions." (G-14.) From www.thefreedictionary.com:

> Empirical – 1. a. Relying on or **derived from observation or experiment**: empirical results that supported the hypothesis. b. Verifiable or provable by means of observation or experiment: empirical laws. 2. Guided by practical experience and not theory, especially in medicine. (Emphasis added.)

So models are "theoretical" in nature and the agency implies that they are somehow based in observation or experiment that support the hypotheses of the models. That would be required, because as Verbyla and Litaitis (1989) assert, "Any approach to ecological modelling has little merit if the predictions cannot be, or are not, assessed for their accuracy using independent data." This corresponds directly to the concept of "validity" as discussed by Huck, 2000: "(A) measuring instrument is valid to the extent that it measures what it purports to measure."

However, there is no evidence that the FS has performed validation of any the models for the way they were used to support the EA's analyses. There is no documentation of someone using observation or experiment to support the model hypotheses.

As Huck, (2000) explains, the degree of "content validity," or accuracy of the model or methodology is established by utilizing other experts. This, in turn, demonstrates the necessity for utilizing the peer review process. The validity of the various models utilized in the EA's analyses have, by and large, not been established for how agency utilizes them. No studies are cited which establishes their content validity, and no independent expert peer review process of the models has occurred.

Larson et al. 2011 state:

> Habitat models are developed to satisfy a variety of objectives. ...A basic objective of most habitat models is to predict some aspect of a wildlife population (e.g., presence, density, survival), so assessing predictive ability is a critical component of model validation. **This requires wildlife-use data that are independent of those from which the model was developed.** ...It is informative not only to evaluate model predictions with new observations from the original study site but also to evaluate predictions in new geographic areas. (Internal citations omitted, emphasis added.)

USDA Forest Service, 2000c (a FS forest plan monitoring and evaluation report) provides an example of the agency acknowledging the problems of data that are old and incomplete, leading to the limitation of models the FS typically uses for wildlife analyses for old-growth wildlife habitats:

> Habitat modeling based on the timber stand database has its limitations: the data are, on average, 15 years old; canopy closure estimates are inaccurate; and data do not exist for the abundance or distribution of snags or down woody material… .

In the above case, the FS expert believed the data were unreliable, limiting the usefulness and applicability (validity) of the model. In other places in this objection—particularly regarding old growth—we discuss this staleness of data.

Ruggiero, 2007 (a scientist from the research branch of the FS) recognizes a fundamental need to demonstrate the proper use of scientific information, in order to overcome issues of decisionmaking integrity that arise from bureaucratic inertia and political influence. Ruggiero, 2007 and Sullivan et al., 2006 provide a commentary on the scientific integrity and agency use and misuse of science. And the Committee of Scientists (1999) recommend "independent scientific review of proposed conservation strategies…"

The EA violates NEPA because the FS has not insured the reliability of data input to the models, the FS has not validated the models for the way the EA utilizes them, and the FS has overly narrowed the information it considers to be best available science.

The documents, "USDA-Objectivity of Regulatory Information" and "USDA-Objectivity of Scientific Research Information" are instructional on this topic.

Beck and Suring, 2011 state:

> Developers of frameworks have consistently attained scientific credibility through published manuscripts describing the development or applications of models developed within their frameworks, but a major weakness for many frameworks continues to be a lack of validation. Model validation is critical so that models developed within any framework can be used with confidence. Therefore, we recommend that models be validated through independent field study or by reserving some data used in model development.

Beck and Suring, 2011 developed several criteria for rating modeling frameworks—that is, evaluating their validity. Three of their criteria are especially relevant to this discussion:

Habitat–population linkage	Does the modeling framework incorporate vital rates (e.g., production, survival), other demographic parameters (e.g., density, population size); surrogates (e.g., quality of home ranges, habitat conditions in critical reproductive habitats, presence/absence) of population demographic parameters; or does the modeling framework model habitat conditions without specific consideration of wildlife population parameters?	0 = does not rely on population demographics or surrogates of modeled species 1 = relies on surrogates for population demographic parameters or framework; can utilize population demographics if desired, but is not dependent on them 2 = specifically relies on population demographics of modeled species
Output definition	Is the output well defined and will it translate to something that can be measured? acceptance by an array of professionals?	1 = difficult 2 = moderate 3 = easy application of the modeling framework

Darimont, et al., 2018 advocate for more transparency in the context of government conclusions about wildlife populations, stating:

> Increased scrutiny could pressure governments to present wildlife data and policies crafted by incorporating key components of science: transparent methods, reliable estimates (and their associated uncertainties), and intelligible decisions emerging from both of them. Minimally, **if it is accepted that governments may always draw on politics, new oversight by scientists would allow clearer demarcation between where the population data begin and end in policy formation** (Creel et al. 2016*b*; Mitchell et al. 2016). Undeniably, social dimensions of management (i.e., impacts on livelihoods and human–wildlife conflict) will remain important. (Emphasis added.)

In a news release accompanying the release of that paper, the lead author states:

> In a post-truth world, **qualified scientists are arm's length now have the opportunity and responsibility to scrutinize government wildlife policies and the data underlying them.** Such scrutiny could support transparent, adaptive, and ultimately trustworthy policy that could be generated and defended by governments. (Emphasis added.)

A Science Consistency Review is long overdue for the revised Forest Plan. (See Guldin et al., 2003, 2003b). The FS prepared Guldin et al. (2003) which:

> ...outlines a process called the science consistency review, which can be used to evaluate the use of scientific information in land management decisions. Developed with specific reference to land management decisions in the U.S. Department of Agriculture Forest Service, the process involves assembling a team of reviewers under a review administrator to constructively criticize draft analysis and decision documents. Reviews are then forwarded to the responsible official, whose team of technical experts may revise the draft documents in response to reviewer concerns. The process is designed to proceed iteratively until reviewers are satisfied that key elements are **consistent with available scientific information.**

The Committee of Scientists (1999) state:

> To ensure the development of scientifically credible conservation strategies, the Committee recommends a process that includes (1) scientific involvement in the selection of focal species, in the development of measures of species viability and ecological integrity, and in the definition of key elements of conservation strategies; (2) independent scientific review of proposed conservation strategies before plans are published; (3) scientific involvement in designing monitoring protocols and adaptive management; and (4) a national scientific committee to advise the Chief of the Forest Service on scientific issues in assessment and planning.

FURTHER REMEDY

Provide the remedy requested AWR's Objection to the Forest Plan.

Sincerely submitted,

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