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Introduction

These comments on the Clark Fork Face Forest Health and Fuels Reduction Project (Clark Fork Face) are from the Flathead-Lolo-Bitterroot Citizen Task Force, Friends of the Bitterroot, Western Watersheds Project, Alliance for the Wild Rockies, WildEarth Guardians, Footloose Montana and Mike Bader, independent consultant.

The Garnet Mountains just outside of Missoula, Montana are geographically situated to serve as an important residential habitat for grizzly bears, lynx and wolverine. It is also a crucial habitat linkage between the Northern Continental Divide Ecosystem (NCDE) and the greater Bitterroot ecosystem. For example, nearly every grizzly bear verified in the Sapphire and Bitterroot Mountains is believed to have come from the NCDE and crossed Interstate 90 from the Garnets to the John Long and Sapphire Mountains. The Clark Fork River is designated as critical habitat for bull trout and the Project Area is within the NCDE Demographic Monitoring Area (Zone 1) for grizzly bear, critical habitat for lynx and habitat for wolverine. The Clark Fork Face Project Area is over 50 miles long. Moreover, this area is enormously popular and extremely important to many thousands of people who live nearby, including in Missoula, only 5 miles west. The area abuts the Clark Fork River and is a bastion of recreation and outdoor-enjoyment for thousands of people each year.

Purpose and Need

The project is being disingenuously promoted as a forest health improvement project. Project Objectives are protecting human lives and residences and restoring the natural range of variation and restoring ecological conditions. However, the bias towards industrial logging under the guise of fire protection is apparent.

The first objective of the project is protecting life and property from fire. However, commercial logging and prescribed burning are the proposed major treatments with logging across vast acreage with extensive, permanent road construction.

> *"Coupled with the deviated and unhealthy state of the BLM forested stands, the private land in the planning area has experienced subdivision and rural development in the past decades. What was once a large industrial forest ownership, is now overwhelmingly (48% of the planning area) small, nonindustrial private landowners who are constructing homes and buildings in the forest (see table 1). This subdivision and rural development have effectively transitioned the entire planning area to Wildland-Urban Interface (WUI)*

when measured as a proximity to structures (See Appendix D, map 9.7). Because of this shift in ownership and use of the private land, the BLM's forested parcels represent an increased risk from wildfire to the private structures and improvements and also to the safety of the residents and firefighters. It is these twin realities: the deviation from NRV and the expansion of the WUI that necessitate this project." (EA page 2).

This is an approach that has been criticized in several scientific papers and by the Missoula County Board of Commissioners (Wildfire Adapted Missoula comments). Designating broad landscapes as Wildland Urban Interface (WUI) distorts the concept. This paradigm must be replaced by the Structure Ignition Zone defined by fire scientists including retired Forest Service fire scientist Dr. Jack Cohen.

The idea that federal and state land managers are obligated to provide subsidized fire protection to private individuals who chose to build in fire-risk areas far from rural fire departments is bogus. BLM lands only constitute about 10% of the overall project area. If the adjacent landowners (58% private; state and federal agencies) fail to perform fuels management treatments, BLM admits the impact of this project on fire risk would be minimal.

The BLM considers mature and old-growth forest (MOG) to be unhealthy, due to the fact that even one mature tree could host beetles, which could then spread. The majority of the proposed treatments involve extensive timber cutting including clearcutting to get rid of potential vector trees and replace them with quick-growing young commercially valuable timber species.

The objective of progressing toward the "midpoint" of the NRV (Natural Range of Variation) is to sell off the MOG and reset the land. The 4th objective, increasing resistance to insects and disease, is apparently another subterfuge for selling MOG to the highest bidder. The last objective, helping the timber industry, explains the previous objectives.

Enhancing limber pine is offered as an important objective, yet would only constitute 306 acres, 1% of the action area. The Timber Management treatment is the largest proposed treatment, and the Fuels Management treatment (also timber management and prescribed burning by another name) is the second largest treatment type. However, on pages 17-18 it shows that multiple treatments will often occur in each area, and that the tables on these pages only show one of those multiple treatments. Thus, timber cutting may well take place on more than even the noted acreage.

NEPA Violations

The roll-out of this project has been disturbing. The BLM initially allowed only an 11-day comment period which is hardly adequate for a 10-15 year project. BLM did extend the comment period, but only after public pressure. However, just two public open house meetings were held, one in Drummond and one in Clinton. These were held outdoors in March of 2021, in the cold, in the middle of the COVID outbreak in which many people were on lockdown

(including the Missoula BLM Office and most other agencies in the area) and most people were avoiding groups. Worse, BLM would not offer Zoom or another virtual meeting platform.

No public meetings were held in and near Missoula. Meetings should have been held in the Bonner and Missoula areas at the very least, because the vast majority of the people who use the area and are interested in the conservation of the native fish and wildlife and forests live there.

No Range of Alternatives as Required by NEPA

Only two alternatives were considered, "No-action" and "Proposed." NEPA generally requires a range of alternatives for major projects like the Clark Fork Face Project which involve several threatened species and critical habitat, not just a yes/no. No real alternatives or variations to the proposed action were considered. The obvious, missing alternative would be to consider treatments that don't include commercial logging and without road-building but with road reduction and reclamation options to improve wildlife habitat security. There is a no-road-building option mentioned as an alternative considered but it was not analyzed.

Not All Information is Available to the Public

The EA is the only document available on the BLM ePlanning site. Many of the sections in the EA refer to other analyses or documents that are available in the Project Record (riparian, wildlife, etc.). But these do not appear to have been released to the public to allow them to really understand this EA. The EA states that the separate biological analysis found the project was Likely to Adversely Affect grizzly bears, lynx, and lynx critical habitat. Moreover, BLM staff have not been available to help the public find and understand these documents because they have been away from work during the holiday period.

Threatened Species and Species Eligible for ESA Listing

Lynx

The US Fish and Wildlife Service designated critical habitat for lynx that includes the Clark Force Face Project Area and lands directly adjacent to the Project Area. They determined the following physical and biological features are essential to the conservation of the species.

1) Boreal forest landscapes supporting a mosaic of differing successional forest stages and containing:

(a) Presence of snowshoe hares and their preferred habitat conditions, which include dense understories of young trees, shrubs or overhanging boughs that protrude above the snow, and mature multistoried stands with conifer boughs touching the snow surface;

(b) Winter conditions that provide and maintain deep fluffy snow for extended periods

of time;

(c) Sites for denning that have abundant coarse woody debris, such as downed trees and root wads; and

(d) Matrix habitat (e.g., hardwood forest, dry forest, non-forest, or other habitat types that do not support snowshoe hares) that occurs between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) such that lynx are likely to travel through such habitat while accessing patches of boreal forest within a home range.

Lynx in the Rocky Mountains of Montana select mature, multistoried forests composed of large-diameter trees with high horizontal cover during winter. These forests are composed of mixed conifers that included lodgepole pine, Douglas-fir, and western larch, but predominately consisted of Englemann spruce and subalpine fir in the overstory and midstory (Squires et al. 2010).

Lynx overwhelmingly prefer preexisting sheltered spaces created by downed logs in mature forests. Management actions that alter spruce-fir forests to a condition that is sparsely stocked (e.g. mechanically thinned) and has low canopy closure (<50%) would create forest conditions that are poorly suitable for denning (Squires et al. 2010). Lynx tend to avoid sparse, open forests and forest stands dominated by small-diameter trees during the winter. (Squires et al. 2006).

Snowmobile trails may facilitate coyote movements into areas with deeper snow during the winter (Gese et al. 2013). Since coyote use of snowmobile trails was related to how much was available, coyote movements could possibly be altered by limiting snow compaction. Researchers suggest the use of snowmobiles may result in consistent compacted trails within lynx conservation areas that may be detrimental to local lynx populations in the Intermountain West. (Id.)

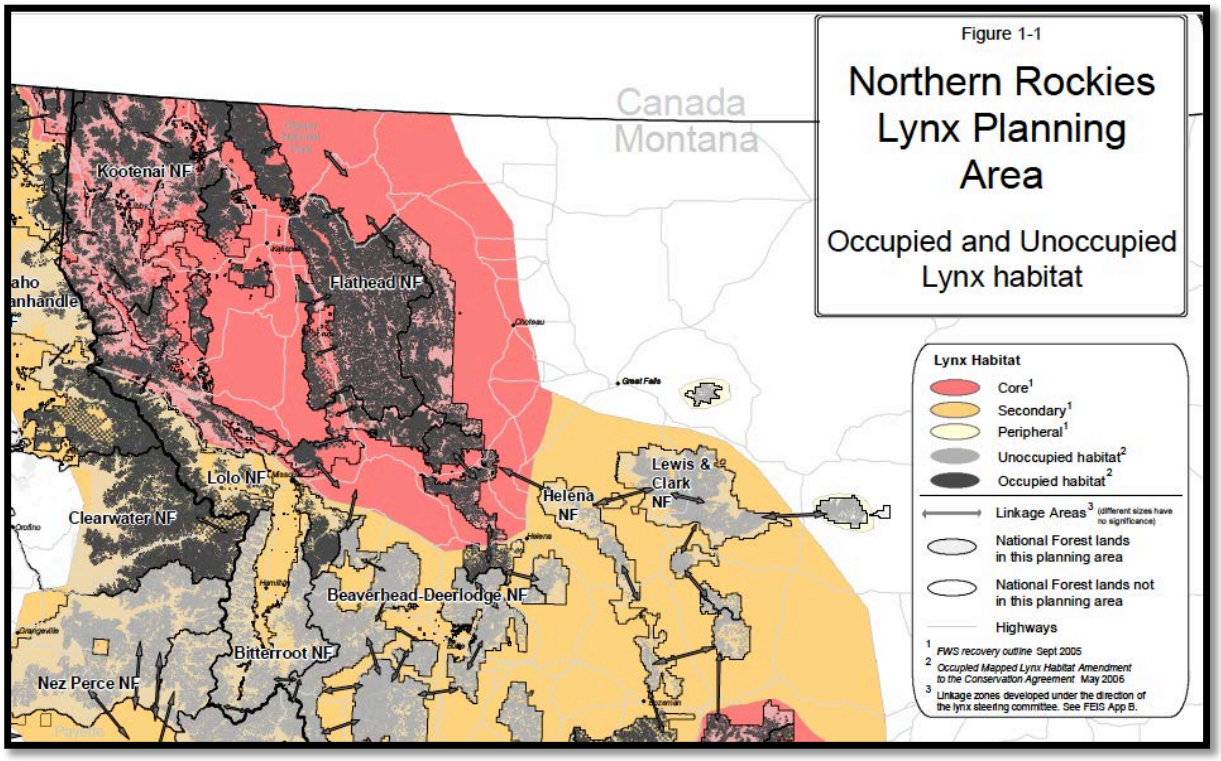
Precommercial thinning has been shown to reduce hare numbers by as much as 2- and 3-fold due to reduced densities of sapling and shrub stems and decreased availability of browse. Researchers believe that the practice of precommercial thinning could significantly reduce snowshoe hares across the range of lynx.

Removal of larger trees from mature multi-story forest stands to reduce competition and increase tree growth or resistance to forest insects may reduce the horizontal cover (e.g., boughs on snow), thus degrading the quality of winter habitat for lynx. Similarly, removing understory trees from mature multi-story forest stands reduces the dense horizontal cover selected by snowshoe hares, and thus reduces winter habitat for lynx.

Fragmentation can affect lynx by reducing their prey base and increasing the energetic costs of using habitat within their home ranges. Direct effects of fragmentation on lynx include creation of openings that potentially increase access by competing carnivores, increasing the edge between early-successional habitat and other habitats, and changes in the structural complexities and amounts of seral forests within the landscape.

The importance of stepping stone areas to species in a changing climate is demonstrated in Saura et al 2014:

> *"Synthesis and applications. Previous static connectivity models seriously underestimate the importance of stepping-stone patches in sustaining rare but crucial dispersal events. We provide a conceptually broader model that shows that stepping stones (i) must be of sufficient size to be of conservation value, (ii) are particularly crucial for the spread of species (either native or invasive or genotypes over long distances and (iii) can effectively reduce the isolation of the largest habitat blocks in reserves, therefore largely contributing to species persistence across wide spatial and temporal scales."*



Map 1. Lynx Habitat Map Showing the Project Area is a Linkage, U.S. Forest Service.

The Proposed Action violates these principles of lynx habitat and prey conservation. Page 19 of the EA states that fuels management treatments (timber cutting and burning) will occur in critical lynx habitat within the WUI, Fire Management Zone 1 and FMZ 2. However, treatments are not allowed in FMZ 2 in lynx habitat under the BLM 2021 Resource Management Plan (RMP).

The lynx section (EA page 63) states that prescribed burning won't occur in lynx habitat. In contrast, the bottom of page 19 states that fuels management treatments (timber cutting plus prescribed burning) will be used *"to enhance and create dense early stand initiation [lynx]*

forage habitat." Early stand initiation means clearcutting the mature forest that actually provides high-quality lynx habitat and is in extremely limited supply. In the 1980s this area was known for having numerous lynx. The lynx began to disappear with major industrial clearcutting in the 1980s and 1990s that removed the MOG. This project seeks to remove the bits of mature forest that remain and set the entire landscape back very far from again offering the MOG habitats that most benefit lynx.

The BLM Missoula RMP was released in 2021 and still may not be fully approved. In that plan the BLM was given a small allotment of acres that could be treated in FMZ 1 and WUI lynx habitat supposedly for fuels reduction, but they agreed not to treat lynx habitat in FMZ 2. Now, only a year later, the BLM is set to cut and burn forest in critical lynx habitat in FMZ 2, which the BLM admits is neither WUI nor close to it.

Pages 25 and 64 go somewhat in-depth discussing thinning treatments designed specifically to benefit snowshoe hare/lynx habitat, that could be used *"where appropriate"* in lynx critical habitat, without actually saying where they are.

Grizzly Bear

> *"Montana FWP considers The CFF Project Area to be occupied grizzly habitat where females with young can be expected. FWP also considers this area to be an important "stepping stone" area for linkage between grizzly population centers. An adult male has recently been documented using areas both north and south of highway I-90 in and near the Project Area, and denning south of the highway."* BA, page 16.

The EA at page 11 states that: *"The Northern Continental Divide Ecosystem Grizzly Bear Conservation Strategy (USDI-FWS 2013) and the Grizzly Bear Recovery Plan (USDI-FWS 1993) would be followed."* Even though the BLM is a signed party to the Conservation Strategy, this statement is false. The USFWS Biological Opinion found that the existing, pre-project road situation is adversely affecting the grizzly bear.

> *"Current total density of motorized roads in this geographic area could pose ongoing adverse effects to grizzly bears, with or without the proposed action, by allowing ongoing disturbance that potentially displaces and increases energy demands for adult female grizzlies that may use the area.* (Second Supplement to BA, 4/26/22 page 1).

> *"Open road density in the planning area is relatively high (2.46 mi /mi²), with an open road density of 3.49 mi/mi² on BLM-managed lands in the planning area. Road density is negatively correlated with grizzly bear secure habitat, generally meaning blocks of habitat more than 500m from a road."* (EA page 56).

Total Road Density in the Project Area is 4.35 mi/mi^2. The Project would increase this to 4.94 mi/mi^2 (Supplement to BA 4/26/22, page 3). Approximately 84% of the lands covered by the Missoula RMP are open to motorized use (RMP, page 94).

It is also highly likely that there are user-created roads and motorized trails that have not been accounted for. In addition to user-created routes the BLM must analyze the effectiveness of barriers and gates on roads that are theoretically closed to motorized use by the public. The BLM and USFWS did not take illegal access into consideration for road density analysis as required by the federal court decision Alliance for the Wild Rockies v. Probert [CV 18-67-M-DWM].

These levels of road density are completely inconsistent with grizzly bear conservation and the best available scientific information and represent an illegal taking. For example, the Draft Statewide Grizzly Bear Management Plan from Montana Fish, Wildlife & Parks (2022) states that the management objective for lands owned or managed by FWPs avoids road densities more than 1mile/mi^2. Thus, the Open Motorized Route Density (OMRD) on BLM lands in the Project Area is already 3.5 times the basic standard on other state and federal lands and 1.75 times the Conservation Strategy standard for Zone 1.

The Conservation Strategy at page 10 states:

> *"Management Zone 1 (7,514 mi2, 19,460 km2) provides a buffer around the PCA, where the population objective is continual occupancy by grizzly bears. In addition, occupancy of this area by grizzly bears will allow for future connectivity with other grizzly bear ecosystems. The PCA and Zone 1 together (16,439 mi2, 42,578 km2) will be the area within which population data are collected and mortality limits apply, as described in Chapter 2. This combined area will be referred to as the DMA."*

The Conservation Strategy at page 96 states that the standard in Zone 1 is to maintain current conditions with no net increase in total road linear road miles open to public motorized use:

> *"…our approach is to maintain these conditions on the landscape. By signing this Conservation Strategy, the USFS and BLM have committed to maintaining or establishing limits on motorized access routes that are compatible with a stable to increasing grizzly bear population in the NCDE. Changes to land management plans through future revisions will be guided by the agreements reached in this Conservation Strategy and will be consistent with this intent."*
>
> *<u>BLM:</u> Efforts to consolidate public lands, conservation easements with willing landowners, and other efforts to improve provide habitat connectivity and facilitate the movement of wildlife are encouraged. There will be no net increase in the linear miles or density of roads that are open for public motorized use during the non-denning season in Zone 1. (CS, page 97)."*

However, subsequent to the 2018 Conservation Strategy the BiOp for the Missoula Resource Management Plan (2020) includes additional stipulations.

> *"The 2020 Biological Opinion (USDI-FWS) on the MiFO RMP provides a small allowance for construction of temporary roads by NCDE zone (see Table 12) but does not allow for an increase in the overall density of existing permanent roads within a given geographic area under the MiFO jurisdiction without site-specific consultation."* BA, page 20.

The BiOp included limitations on road building in the MiFO RMP (USDI-BLM 2021) due in large part to the following rationale:

> *"We expect harm would be caused by significant under-use of key habitat in areas affected by high road densities to levels that result in decreased fitness and impaired reproductive potential. In other words, infrequently and in site-specific circumstances, an adult female grizzly bear wary of humans and human-generated disturbance may not breed at its potential frequency or may fail to complete gestation due to decreased fitness."* BA, page 22.

The Project is in clear violation of the Biological Opinion for the Missoula Resource Management Plan (RMP). The project would result in 22 miles of new road construction, all within NCDE Grizzly Bear Zone 1. Of these, 16 miles would be permanent road and 6 miles temporary road.

On top of the 22 miles of road construction another 19 miles of road are added to the BLM Road System without any analysis. What is the impact on grizzly bears from adding these roads to the system? There is absolutely no discussion in the EA. This is a NEPA violation and an "arbitrary and capricious" violation of the Administrative Procedure Act for failing to address an important component of the issue.

This question must be answered according to the federal court rulings on the Soldier-Butler Project in NCDE Zone 1 (Alliance for the Wild Rockies et al. v. Marten) where, like the BLM proposes through the Clark Fork Face Project, the Forest Service proposal added "existing roads" to the road system without analyzing the impact on grizzly bears. Map 9.4 and its key in Appendix D of the EA does not appear to show these 19 miles or what role they have in the Project other than *"assisting in project implementation."* This map is low resolution and of low quality and is insufficient for the purposes of an EA or BiOp.

With the 16 miles of new permanent roads and with the 19 miles of permanent roads added to the system, it represents an approx. 30% increase in permanent roads on BLM lands in the Project Area. Since the project is anticipated to last for 10-15 years, even the temporary roads will have long term effects. In their 2021 RMP, the Missoula Field Office anticipated building no more than 7 miles of new temporary roads in the NCDE PCA and no more than 2 miles in Zone 1 within a 10-year period. Here, one year later, BLM is proposing to build 6 miles of temporary

road, already exceeding the amount they were allowed after negotiations with USFWS for the RMP.

> *If the action agency (1) fails to assume and implement the terms and conditions, or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of Section 7(o)(2) may lapse.* (50 CFR Sec. 402.14(g)(8).

This has occurred in regards to the BiOp on the Missoula RMP and therefore "the protective coverage of Section 7" has lapsed and formal consultation must be reinitiated.

Here, the Clark Fork Face Project does not comply with the reasonable and prudent measures set forth in the Take Statement for the Missoula RMP, which requires implementation of nondiscretionary reasonable and prudent measures that minimize or reduce the potential for project-related mortality and displacement of grizzly bears.

There is also new scientific information on the effects of non-motorized use of roads and trails in grizzly bear habitat by mountain bikers. Dr. Chris Servheen, former National Grizzly Bear Recovery Coordinator, has said that mountain biking in grizzly bear habitat is particularly conducive to bear-human confrontations due to surprise encounters.

> *"High speed and quiet human activity in bear habitat is a grave threat to bear and human safety and certainly can displace bears from trails and along trails. Bikes also degrade the wilderness character of wild areas by mechanized travel at abnormal speeds."* (quoted in Wilkinson 2020).

Mountain bikes are widely available and now feature shock absorbers, gas and electric-powered motors and spiked tires for over-snow use. ATVs are bigger and go faster. New technology includes snow bikes which are modified motorcycles with tracks instead of wheels which can access off-trail areas and negotiate tight spaces.

Dr. David J. Mattson and other leading grizzly bear scientists have analyzed the impacts of different forms of recreation on grizzly bears, finding that mountain biking is many times more likely to result in a grizzly bear-human encounter. Dr. Mattson is well-known as the former Field Team Leader of the Yellowstone Interagency Grizzly Bear Study Team.

BLM states these lands are heavily used by recreationists including non-motorized mountain bikers who use the road system. BLM does not maintain a trail system in the Project Area and surrounding lands and roads provide public access for recreation (pers. comm. with Maria Craig, BLM Recreation Manager). The BLM website (https://www.blm.gov/programs/recreation/e-bikes) on e-bike policy states:

> *"In December 2020, the BLM amended it's OHV regulations at 43 CFR 8340.0-5 to define e-bikes, which are limited to Class 1, 2, and 3 e-bikes.*

The rule provides that authorized officers may authorize, through subsequent land-use planning or implementation-level decisions, the use of Class 1, 2, and 3 e-bikes on non-motorized roads and trails.

The rule provides managers the ability to exclude e-bikes that meet certain criteria from the definition of off-road vehicle (otherwise known as an off-highway vehicle (OHV)) at 43 CFR 8340.0-5(a).

BLM offices also have the authority to identify which non-motorized trails could be used for e-bike use on BLM-managed lands. BLM District and Field Managers are encouraged to consider authorizing e-bike use in accordance with applicable laws and regulations, including the e-bike rule."

Has BLM done an analysis or made a decision in regards to use of non-motorized roads since the BLM does not maintain a trails system in the Project Area? The EA does not say. May such a decision be made in the future? We do not know. The only reference to mountain bikes in the Missoula RMP is:

> *"Access to public lands may be restricted to a particular type of use (such as hikers, motorized vehicles, and mountain bikes). A small portion of the BLM-managed public lands in the decision area is not accessible to the public or for administrative purposes."* (page 274).

The impacts of non-motorized, but mechanized use must be accounted for, particularly because an additional 16 miles of permanent road would be constructed which would be accessible to mountain bikes and BLM proposes adding another 19 miles also accessible to mountain bikes. There is no practical means of preventing access to closed roads by mountain bikers short of posting a guard at all entry points. There is no discussion of e-bikes which are likely to be used on these roads meaning there will be motorized use on roads the BLM claims will be closed to motorized use by the public during the non-denning season. How will BLM prevent such use? The EA says nothing.

Illegal taking under ESA §9.

> *"Take - to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. [ESA §3(19)] Harm is further defined by FWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by FWS as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering."* [50 CFR §17.3]

Standards based on science show that a Bear Management Unit should have at least 68% of the area in Secure Core (Flathead National Forest 1995). Proctor et al. (2019) recommend at least

60% be in secure core. In the Garnet Geographic Area, just 35% is secure core. (3rd Supplement to BA, page 1). Still, the BLM Proposed Action would impact at least another 485 acres of secure core and actually much more.

The EA incorrectly seems to assume that any female presence equates to the 93% survival standard that applies to the PCA and Zone 1, which it clearly does not. In fact, information that was available to the BLM and USFWS includes research reviewed by Proctor, et al. (2019) showing grizzly bear population density is lower in areas with more than about 1mi/mi^2 open road density. Both the existing baseline condition plus the deleterious effects of the Clark Force Face Project do not meet these standards and will lead to increased unsustainable and illegal female mortality.

The baseline condition is blocking full occupancy and movement of grizzly bears from the NCDE to the Bitterroot Recovery Area and the actual level of take is much higher than revealed in the EA or Biological Opinion. Therefore, the terms and conditions in the Biological Opinion were designed to mitigate a lower level of impact and incidental take than actually exists in both the baseline condition and the expected conditions resulting from the ten-year schedule of project-related activity.

This information shows that ESA § 9 is being violated by allowing excessive take of grizzly bears by violating the standards in the Conservation Strategy and the BiOp on the Missoula RMP and ignoring the best available scientific information related to road management and female grizzly bear mortality. Adding the impact to the current damage to grizzly bears impairs the function of the Project Area as a grizzly bear habitat connectivity area between the NCDE and Bitterroot Recovery Areas, a strategic level recovery goal.

The BLM bases their argument that the project won't harm grizzly bears on the fact that there is already such a high road density in the area that there is almost nothing that can be considered secure habitat. That is a classic definition of a degraded baseline. Then the BLM states: *"bears would likely displace to surrounding available habitat that exists adjacent to the disturbance, and the overall impact is not expected to negatively impact successful breeding of a female grizzly."* Second Supplement to BA, 4/26/22, page 5. BLM admits there will be displacement, but it will be displacement into even more hostile habitats where mortality risk is greatly increased. And the standard is not just breeding, it is rearing and feeding. The following graph from Bader and Sieracki (2022) sums up the relationships between road density, population growth, survival and probability of den selection.

TABLE 8. Road density impacts on Grizzly Bears. Sources: Boulanger and Stenhouse (2014); Pigeon and others (2014); Proctor and others (2019).

Road density (km/km^2)	Adult female survival rate	Population growth rate	Density bears/1000 km^2	Den selection probability
0	≈100%	Positive	30	N/A
0.6	95%	Static	≈ 30	70%
1.2	85%	Negative	10	30%
1.4	75%	Rapid decline	Lower	N/A
1.6	< 75%	Rapid decline	Lower	N/A
2.0	Lower	Rapid decline	Very low	≈ 0%

Moreover, BLM assumes that if closed to motorized use by the public, roads will have no impacts on grizzly bears. That is untrue. In fact, during project implementation the level of traffic and noise on these "administrative roads" will often exceed the baseline traffic on roads open to the public, increasing the road density effect. The Lolo National Forest and USFWS included these effects of administrative use in the BiOp for the Soldier-Butler Project, setting a precedent for consultation. Administrative motorized use of the roads has displacement affects and BLM admits these roads are being kept for future management projects. Thus, there are additional foreseeable impacts. BLM also states these lands are heavily used by recreationists including non-motorized mountain bikers who use the road system. In addition to roads, the prolonged high level of activity with 300-1,000 acres of timber harvest each year for 10-15 years will displace grizzly bears.

"*With the proposed action, 485 acres of secure habitat would be impacted by new roads*." Third Supplement to BA, 4/26/22, page 1). This is an incorrect assessment and is not the standard for Zone 1. The Standard is No Net Loss of Secure Core. For example, any road built "within the 500m buffer" but on the outer edge of the buffer would create a new 500m buffer and consequent unreported and uncalculated loss of secure core. In fact, Map 9.4, EA page 90 shows several new road segments that are outside the 500m buffer on existing roads and need to be buffered 500m which would show additional loss of secure core.

The EA analysis on impacts to grizzly bears focuses on roads but as proposed, the Project would result in serious reductions in cover security and hiding cover for grizzly bears and particularly females with cubs. Through thinning, clearcutting and understory burning, site distances from roads will be greatly increased, sound will travel further, with increased risk of displacement and mortality.

Violations of ESA §7(a)(2) by failing to use the best scientific and commercial data available.

The procedural consultation requirements in the ESA are judicially enforceable and strictly construed. If anything, the strict substantive provisions of the ESA justify more stringent enforcement of its procedural requirements [than the provisions of the National Environmental Policy Act], because the procedural requirements are designed to ensure compliance with the

substantive provisions. The ESA's procedural requirements call for a systematic determination of the effects of a federal project on endangered species. If a project is allowed to proceed without substantial compliance with those procedural requirements, there can be no assurance that a violation of the ESA's substantive provisions will not result. The latter, of course, is impermissible. *Thomas v. Peterson*, 753 F.2d at 764.

> *"An overriding factor in carrying out consultations should always be the use of the best available scientific and commercial data to make findings regarding the status of a listed species,"* (ESA Section 7 Handbook).

The Clark Force Face Project, the formal consultation process and the Biological Opinion are not consistent with the ESA. The Decision, formal consultation process and Biological Opinion:

1) violate the permanent road density and survival standards for female grizzly bears in Zone 1 of the Northern Continental Divide Ecosystem (NCDE);

2) used methods and information that were not based upon the "best scientific and commercial data," and excluded the best available scientific information on denning habitat and open road density;

3) violate ESA § 9 prohibitions on taking;

4) fail to analyze the nexus between the Clark Force Face Project Area and strategic level grizzly bear recovery contained in the Grizzly Bear Recovery Plan and the Conservation Strategy;

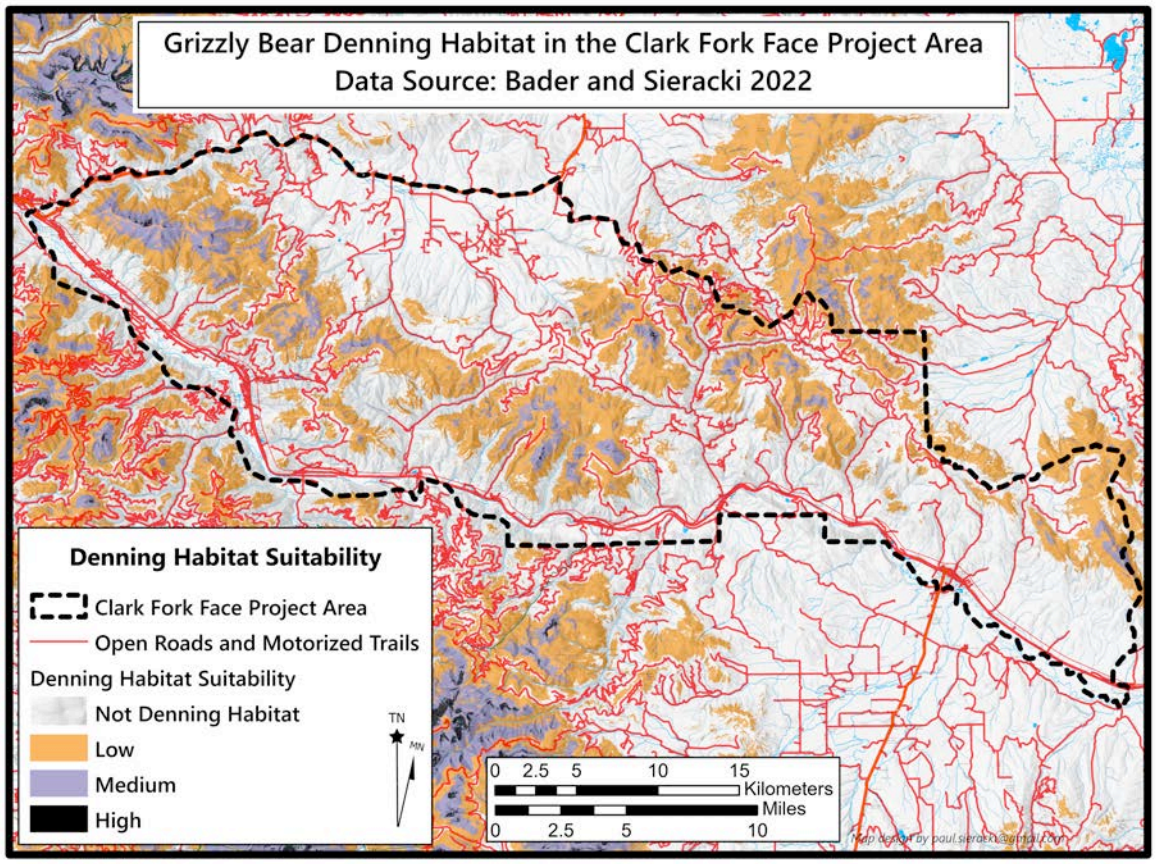
5) ignore other important aspects of the problem by failing to consider the impact of the Proposed Action on grizzly bear denning habitat; failing to account for adding 19 miles of roads to the permanent road system; impacts from mountain bike use of BLM roads, including e-bikes on roads supposedly closed to motorized use; impacts from illegal motorized use of administratively closed roads and user-created motorized routes; failing to analyze the effectiveness of gates and barriers in preventing motorized access by the public; failing to disclose the history of road closure violations including destruction of closure devices such as locks, gates, boulders and humps.

No Analysis of Denning Habitats

> *"Both the Garnet geographic area and the CFF project area offer ample denning habitats for grizzly bears. Denning habitat is not thought to be a limiting factor for grizzly bear in this area. The activities or habitat structure changes associated with the proposed treatments could cause grizzly bears to displace from potential denning areas, but nearby suitable denning habitat would be available. Project activities potentially occurring during denning season would not likely impact grizzly bears. As described in the BO for the MiFO RMP, snow is an excellent sound barrier and impacts to denning*

bears would likely be less in deep snow situations than in shallow snow conditions. It is likely that hibernating bears exposed to meaningless noise, with no negative consequences to the bear, habituate to this type of disturbance. Third Supplement to BA, 4/26/22, page 1).

This is an opinion without citation, not an analysis and certainly not a peer-reviewed published analysis based on the best available scientific information as required by NEPA and the ESA. Bader and Sieracki (2022) found that there are predominately low probability denning habitats in the project area with a low probability of den selection. Denning habitats have been significantly impacted and fragmented by the high open road density in the area (see map 2) which in some cases has reduced denning suitability an entire classification level from High to Moderate, Moderate to Low and Low to None. This is the existing baseline condition and does not include impacts from the Project. Similarly, based on information in Pigeon, et al. (2014), at the current open road density in the Project Area grizzly bear den selection is reduced to < 30%.



Map 2. Denning habitat in the Project Area and the existing open roads and motorized trails baseline, based on incomplete BLM data. Denning habitat has been seriously reduced by the existing level of open roads and this does not include illegal off-trail motorized use by snowmobiles.

Denning grizzly bears are disturbed by sound and vibrations, even from cross-country skiers which can cause them to abandon their dens (Linnell et al. 2002). A female grizzly bear and her cubs were killed by an avalanche set off by a snowmobiler (Hilderbrand et al. 2000). Activity within 200m can cause den abandonment leading to increased cub mortality. Impacts short of den abandonment include physiological changes such as increased heart and breathing rate and wakefulness (Fortin, et al. 2016).

There are currently 91 miles of the Garnet National Winter Recreation Trail open to snowmobile use. Moreover, the 16 miles of permanent road to be constructed and the additional 19 permanent miles added would only be closed to public motorized use during the non-denning seasons and thus available for motorized over-snow use during the denning months, which will lead to additional off-trail high-marking and the increased risk of disturbance to denning grizzly bears including possible den abandonment and the threat of lethal avalanches. Are there adequate law enforcement mechanisms to prevent illegal off-trail use? No. There is also no scientific merit to the idea that grizzly bears are completely protected from disturbance by snow.

Again, the standard for Zone 1 is continual occupancy by females with cubs. Thus, any loss of available denning habitat would be a limiting factor on the ability of the area to support residential occupancy by grizzly bears, including females with cubs which already has a degraded baseline including loss of quality denning habitats.

Connectivity

NEPA's review obligations are more stringent and detailed at the project level, or "implementation stage," given the nature of "individual site specific projects." *Ecology Ctr., Inc. v. United States Forest Serv.,* 192 F.3d 922, 923 n.2 (9th Cir. 1999); see also *Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800-01 (9th Cir. 2003); *New Mexico ex rel. Richardson v. Bureau of Land Management,* 565 F.3d 683, 718-19 (10th Cir. 2009) (requiring site-specific NEPA analysis when no future NEPA process would occur); *Colo. Envtl. Coal. v. Ofc. of Legacy Mgmt.,* 819 F. Supp. 2d 1193, 1209-10 (D. Colo. 2011) (requiring site-specific NEPA analysis even when future NEPA would occur because "environmental impacts were reasonably foreseeable").

"[G]eneral statements about possible effects and some risk do not constitute a hard look, absent a justification regarding why more definitive information could not be provided." Or. Natural Res. Council Fund v. Brong, 492 F.3d 1120, 1134 (9th Cir. 2007) (citation omitted); see also *Or. Natural Res. Council Fund v. Goodman*, 505 F.3d 884, 892 (9th Cir. 2007) (holding the Forest Service's failure to discuss the importance of maintaining a biological corridor violated NEPA, explaining that *"[m]erely disclosing the existence of a biological corridor is inadequate" and that the agency must "meaningfully substantiate [its] finding").*

In this case, that is exactly what BLM has done. It has merely quoted Montana FWPs saying the area is a "stepping stone." Such stepping stones, also known as demographic connectivity areas, are essential for successful female grizzly bear dispersion into historic habitats between

major core recovery areas. BLM has failed to conduct an analysis of likely impacts on the ability of the area to function as a demographic connectivity area.

The failure to conduct a substantive analysis of impacts to denning habitat and connectivity habitat is a failure of both the BA and the USFWS Biological Opinion. USFWS was well aware of the Bader and Sieracki (2022) paper as it was shared with several key USFWS grizzly bear recovery staff and with Ben Conard in the Montana USFWS Office and they acknowledged receiving it. The failure to even cite this paper, which represents the best available scientific information, is a violation of Section 7 requirements and renders the BiOp insufficient.

Existing Degraded Baseline

> *"Environmental baseline - the past and present impacts of all Federal, State, or private actions and other human activities in an action area, the anticipated impacts of all proposed Federal projects in an action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions that are contemporaneous with the consultation in process."* [50 CFR §402.02]
>
> *"The baseline includes State, tribal, local, and private actions already affecting the species or that will occur contemporaneously with the consultation in progress..."* (ESA Handbook).

The "action area" must include "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." 50 C.F.R. 402.02. "An agency cannot fulfill [its Section 7 consultation duties] by narrowly defining the action area to exclude federal activities that are impacting [listed species]." *Defenders of Wildlife v. Babbitt*, 130 F.Supp.2d 121, 126 (D.D.C. 2001). Use of an "overly narrow definition of action area results in the exclusion of certain relevant impacts from the environmental baseline" in violation of the ESA. Id. at 128.

"[W]here baseline conditions already jeopardize a species, an agency may not take action that deepens the jeopardy by causing additional harm." Nat'l Wildlife Fed'n v. NMFS, 524 F.3d 917, 930 (9th Cir. 2008). An action's impact *"cannot be determined or analyzed in a vacuum, but must necessarily be addressed in the context of other incidental take authorized by FWS." Babbitt*, 130 F.Supp.2d at 127. FWS must engage in a meaningful *"analysis of the status of the environment baseline given the listed impacts, not simply a recitation of the activities of the agencies."* Id. at 128.

The record is clear that the existing baseline is harming and taking grizzly bears including loss of suitable habitats including denning habitats. In this case, the BLM did not disclose or analyze the effects of adding 19 miles of permanent roads to the official Road System; therefore, the anticipated effects of the Clark Fork Face Project on grizzly bears, is now unknown. Moreover, the Agencies failed to include analysis of the other miles of roads in the private land in the

Project Area. The ESA Handbook is clear that these private and local roads "already affecting the species" must be included in the baseline.

Cumulative Effects Analysis

The EA does not take the "hard look" required by NEPA and does not conduct a cumulative effects analysis of impacts on grizzly bears, both current and proposed. BLM is required to look at all cumulative effects across the project area including on private, state and other federal lands.

> *"The grizzly bear, lynx, and wolverine analysis areas can be expected to experience increasing human activity, recreation and habitation in the next 3 decades. These increases may cause grizzlies to avoid areas of human disturbance, but also increase the risk of human/grizzly bear conflict. Avoidance of otherwise quality habitats and increased potential for conflict could reduce the value of grizzly bear habitat in the planning area. This could diminish fitness of grizzly bears that otherwise could occupy this area over the next 3 decades. Secure habitat is already minimal in the planning area due to high road density, levels of human activity and number of structures."* (EA page 66).

Again, merely mentioning something is not an analysis.

> *"Effects of the action - the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action. These effects are considered along with the environmental baseline and the predicted cumulative effects to determine the overall effects to the species for purposes of preparing a biological opinion on the proposed action. [50 CFR §402.02] The environmental baseline covers past and present impacts of all Federal actions within the action area. This includes the effects of existing Federal projects that have not yet come in for their section consultation."* Final ESA Section 7 Consultation Handbook, March 1998.

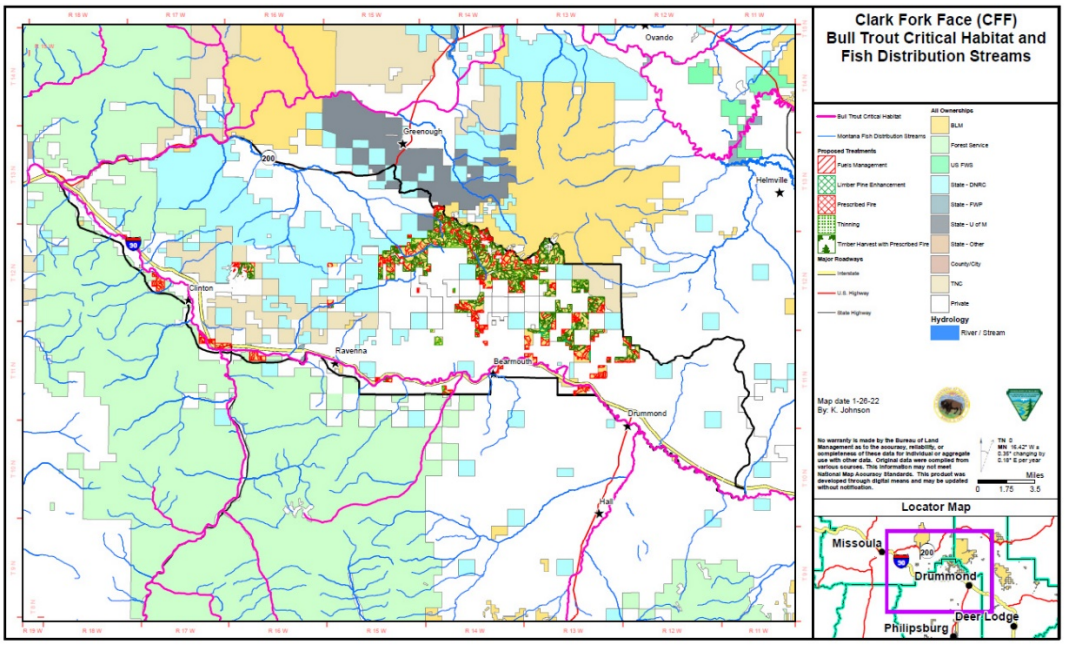
Road Density Calculations

The Conservation Strategy at page 96 states the moving window GIS analysis procedure is "infeasible" in Zone 1 due to areas of private land where road information in incomplete or unavailable. However, in this case the EA provides the road miles on these non-BLM lands in the Project Area so the data was available. There is no reason not to use the moving window approach. It is recognized as the scientific standard among geospatial analysts. The moving window procedure road density usually increases open road density and more accurately assesses the impacts on grizzly bears and other wildlife. Moreover, BLM has access to LIDAR technology and could easily map all the roads on all ownerships within the Project Area and adjacent lands.

Bull Trout

The BLM claims there can be no impact from the Proposed Action on bull trout critical habitat. This is untrue. When considering whether to designate critical habitat for the bull trout, the USFWS was required to consider areas that may occur in areas above but which flow into other occupied habitats. For example, a headwater stream may be blocked to bull trout migration by a natural waterfall or an unnatural blockage yet management activities in these upland areas may well result in impairment to designated critical habitat. A stream itself does not have to be designated critical habitat to have an effect on designated critical habitat if it flows into it or pollutes groundwater which may later upwell downstream in critical bull trout spawning habitats.

The Clark Fork Face Biological Assessment created for Grizzly and Lynx states, "The proposed action would not affect … bull trout or bull trout critical habitat because those species and habitat are not present within the action area." (page 1). It appears no Biological Assessment of effects to bull trout was submitted presumably due to the above statement claiming that bull trout and bull trout critical habitat are not present within the action area. But according to Map 3 (not included in the Environmental Assessment EA), project activities are slated very near if not overlapping with bull trout critical habitat. Timber management and prescribed fire will occur on or near Rock Creek and the Upper Clark Fork, both bull trout occupied streams and bull trout critical habitat. The map also shows project activities along and at the headwaters of Union Creek, what the 2013 Conservation Strategy (CS2013) called a *"significant tributary"* of the Blackfoot one of the main streams that *"historically provided habitat for spawning and rearing for all bull trout upstream of Lake Pend Orielle."* (CS 2013 pages 135 and 15).



Map 3. Clark Fork Face (CFF) Bull Trout Critical Habitat and Fish Distribution Streams.

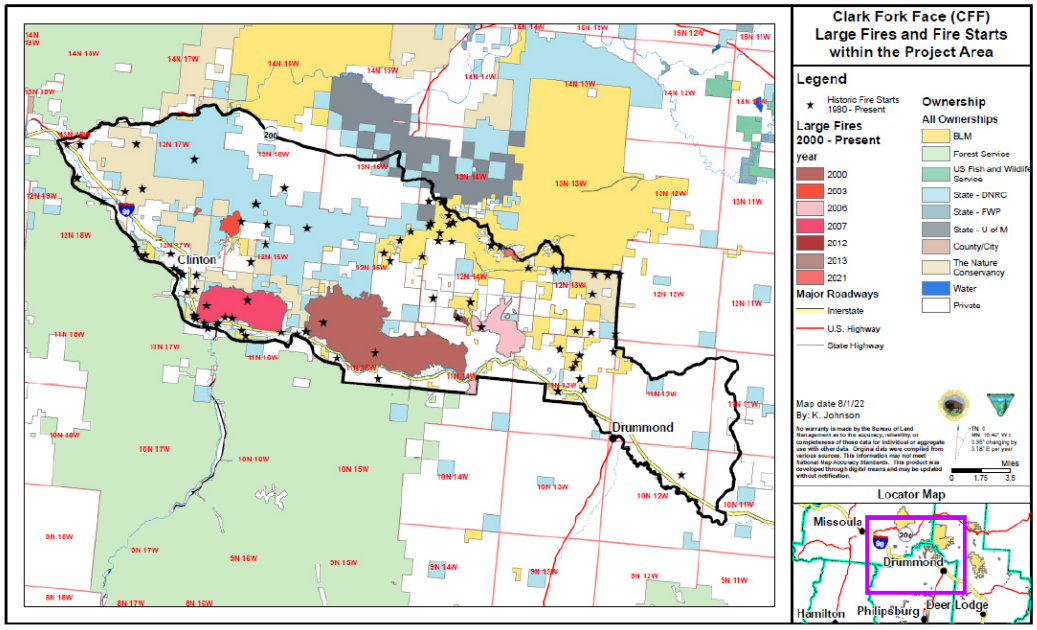
Project documentation relies heavily on design features included in the Missoula Field Office Resource Management Plan (RMP) to assess bull trout effects. EA claims no effect to bull trout and bull trout critical habitat "due to factors associated with design features and conservation measures incorporated in the proposed action." (page 54). However, the 2020 Biological Opinion (2020 Biop) for the RMP states, *"[Missoula Field Office] MiFO made a determination of may affect, likely to adversely affect for grizzly bears, Canada lynx, lynx critical habitat, bull trout, and bull trout critical habitat*." (page 1).

The 2020 Biop goes on to explain, *"Since the Garnet RMP was originally adopted, the MiFO has acquired many additional land parcels with high density road systems. Although road segment effects have been considered within individual project level planning in the past, there has not been a management area-wide analysis to determine the effects of the existing road system to the aquatic ecosystem."* (page II-57). The 2020 Biop requires a Travel Management Plan within five years (id page II-57). It is premature to plan project activities that include temporary and permanent road construction without an analysis of the overall effects of the existing road system to the aquatic ecosystem. Project documents reveal no analysis of the existing road system effects to aquatic ecosystems. Not analyzing roads and project effects at a watershed scale analysis could lead to cumulative impacts that would not be adequately analyzed at a project level.

The EA claims, *"When treatments are designed to comply with the Aquatic and Riparian Habitat Conservation Strategy, adverse impacts to aquatic habitats will be negligible*." (page 14). The 2020 Biop states that an area-wide analysis of the road system *"would allow future project specific planning to identify RHCAs [Riparian Habitat Conservation Areas], riparian management objectives*." (RMO, page II-57). The EA claims that Riparian Conservation Areas (RCA) *"were evaluated to determine RMOs and assess site specific RCA widths to protect streams and wetlands*." (page 121). How is it possible to assess these without an area-wide analysis of the current road system as required in the 2020 Biop? These RCA and RMO determinations are only available in the project files (EA page 121) not in the EA or on the E-planning site. According to the RMP, if RMOs are not established then INFISH RHCA boundaries would apply. Project documentation does not demonstrate the hard look necessary to determine RCAs and RMOs. Thus, treatments do not comply with Aquatic and Riparian Habitat Conservation.

Effects to aquatic systems from recent fires must also be considered. The map of large fires and fire starts, (see Map 4) does not show the 2017 fires that would affect the project area. Why are these fires not considered in baseline analysis of the area?

9.10 Large Fires and Fire Starts Map.



Map 4. Large fires and fire starts map from EA.

No analysis of the current road system and its effects on bull trout have been assessed. Failing and highly deleterious roads have not been identified and slated for decommissioning.
The 2015 Biological Opinion of the Effects to Bull Trout and Bull Trout Critical Habitat from Road Management Activities on National Forest System and Bureau of Land Management Lands in Western Montana states, *"Given this high percentage, and the negative effects of roads on streams, the management of the road system is a principal concern for bull trout."* Without a baseline analysis of existing roads and conditions, how can project activities and the construction of new roads and their effect on hydrologic function be analyzed properly? The EA claims that impacts will not be from road construction but from the removal of temporary roads. The EA states, *"Impacts from temporary roads are anticipated to be short term in duration and result in removal of the road prism from the landscape*." (page 13), but then admits that soil recovery would not occur for *"10-40 years."* (page 13).

Lee et al. (1997) note that although improvements in road construction and logging methods can reduce sediment delivery to streams, sedimentation increases are unavoidable even when using the most cautious logging and construction methods. Please show evidence that BMPs actually protect fish habitat and water quality. Reid and Dunne (1984) states, *"Erosion on roads in an important source of fine-grained sediment in streams draining logged basins of the Pacific Northwest."*

Science shows that project activities will affect bull trout. Roads are a continuing problem for bull trout and this project would construct 22 miles of road (6 miles temporary) and add another 19 miles to the road system. A paper by the Western Montana Level 1 Bull Trout Team (Riggers et al. 2001) states:

a) Habitat conditions are another factor that has changed significantly. In general, fish habitat quality is much less diverse and complex than historic, and native fish populations are therefore less fit and less resilient to watershed disturbances. Roads, more than any other factor, are responsible for the majority of stream habitat degradation on National Forest Lands in this area (USDA 1997). Historically roads were not present in watersheds and did not affect hydrologic or erosional patterns. Now, however, extensive road networks in many of our watersheds contribute chronic sediment inputs to stream systems and these effects are exacerbated when fires remove the vegetation that filters road runoff.

b) … the real risk to fisheries is not the direct effects of fire itself, but rather the existing condition of our watersheds, fish communities, and stream networks, and the impacts we impart as a result of fighting fires. There, attempting to reduce fire risk as a way to reduce risks to native fish populations is really subverting the issues. If we are sincere about wanting to reduce risks to fisheries associated with future fires, we ought to be removing barriers, reducing road densities, reducing exotic fish populations, and re-assessing how we fight fires. At the same time, we should recognize the vital role that fires play in stream systems and attempt to get to a point where we can let fire play a more natural role in these ecosystems.

c) …we believe, in most cases, proposed projects that involve large-scale thinning, construction of large fuel breaks, or salvage logging as tools to reduce fuel loadings with the intent of reducing negative effects to watersheds and the aquatic ecosystem are largely unsubstantiated. Post-fire activities such as these that increase the probability of chronic sediment inputs to aquatic systems pose far greater threats to both salmonid and 44 amphibian populations and aquatic ecosystem integrity than do fires and other natural events that may be associated with undesired forest stand condition (Frissell and Bayles 1996).

Hauer et al. 1999 writes, *"It appears that patterns of upland logging space and time may have cumulative effects that could additionally alter the balance of LWD delivery, storage, and transport in fluvial systems. These issues will be critical for forest managers attempting to prevent future detrimental environmental change or setting restoration goals for degraded bull trout spawning streams."* Hauer et al. 2007 found:

"Streams of watersheds with logging have increased nutrient loading, first as SRP and NO3, which is rapidly taken up by stream periphyton. This leads to increased algal growth that is directly correlated with the quantity of logging within the watershed. The increased periphyton increases particulate organic matter in transport as the algal biomass is sloughed into the stream. We observed this as increased TP and TN in logged watershed streams. Other studies in the CCE have shown that increased sediment loading and an incorporation of fines into spawning gravel, especially during the summer and fall base flow period, has a dramatic effect on the success of spawning by bull trout (Salvelinus confluentus). Experiments have shown that as the percentage of

fines increases from 20% to 40% there is >80% decrease in successful fry emergence."

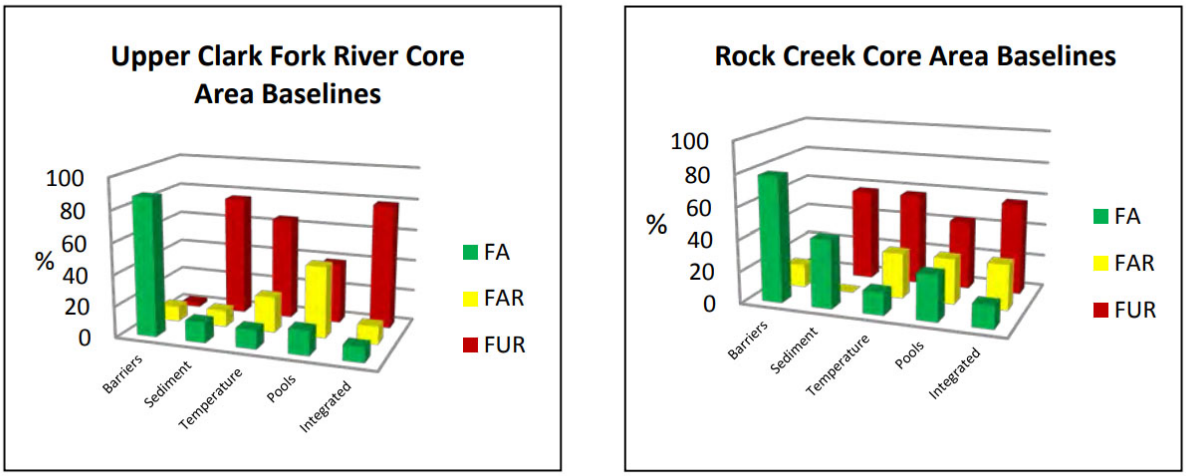
Kirk et al. 2021 discovered that

> *"streams with intact forest cover at the watershed level had low thermal sensitivities, which slowed rates of projected warming. As a result, streams with forested watersheds were predicted to have smaller declines in thermal integrity and lower extirpation probabilities of brook trout. Additionally, non-native brown trout were not predicted to expand distributions under projected warming, suggesting minimal synergistic effects between non-native species and climate change. Forest cover buffers headwater streams from the effects of global change."*

Effects on bull trout are not fully disclosed or analyzed in the EA. BMPs and design features are not fully described in project documentation and their ability to avert adverse effects is not explained. Yet, according to the EA, they are the reason bull trout and hydrologic function will be maintained. *"Bull trout (threatened) and bull trout critical habitat would not be affected due to factors associated with design features (Appendix F) and conservation measures incorporated into the proposed action*." (page 11). The RMP does not describe BMPs and design features as infallible, *"If these measures are properly implemented, impacts to aquatic habitat due to roads and rights-of-way … **should** be minimized over the life of the plan* (emphasis added, page 169). There is no guarantee that BMPs will be maintained into the future. The EA does not mention any funding set aside to maintain the extensive road system in the project area.

The project area includes sections of the Blackfoot River, Rock Creek and the Upper Clark Fork Rivers, all bull trout critical habitat. Baseline conditions for bull trout in these areas are fair to poor. *"Bull trout numbers in Rock Creek continue to decline, and population levels are alarmingly low."* (CS 2013 page 94). Table 1 shows baseline conditions for the three rivers.

Figure I-4. Individual graphs for each Core Area showing Functional Condition Classes (FA = Functioning Appropriately; FAR = Functioning At Risk; FUR = Functioning at Unacceptable Risk) for the four primary habitat indicators (barriers, sediment, temperature, and pools) and the integrated call from the 2010 Baseline update.



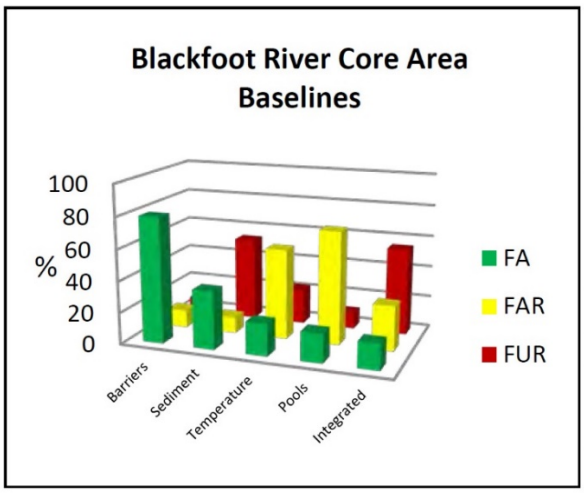


Table 1. Core Area Baselines from CS 2013

Project documentation does not analyze or disclose baseline conditions and does not demonstrate movement towards recovery as directed in the current conservation strategy.

The EA claims no roads will be built in RCAs but admits, *"New road construction adjacent to RCAs will follow BMPs (MT-DNRC 2015) and Design Features to minimize or eliminate potential*

Photos 1 and 2 of Willow Creek road failure that pushed sediment into Bull Trout Critical Habitat.

impact to fisheries habitat." Please explain how these features can minimize or eliminate impacts when roads are constructed near RCAs. Permanent roads will also be constructed on steep slopes. *"Decisions regarding the construction of roads vs permanent roads mainly followed engineering and soil considerations. Roads > 0.5 miles in length or located in part on > 45% slopes must be permanent because they could not be effectively obliterated* (Second Supplement to the BA p 2)." Roads should not be constructed on 45% slopes. They are candidates for catastrophic failure as we have seen on the Willow Creek Road in the Bitterroot. Sediments from the debris flow cut a switchback, crossed the lower road and landed in Willow Creek, bull trout critical habitat. (see photos 1 and 2). The EA also claims that *"areas with planned road construction that intersect with geologically unstable soils will be avoided to the maximum extent possible."* (page 121). These areas would not be excluded, merely avoided if possible? What is the proposed procedure to identify crusts and how will they be avoided? Even if there is not a failure, roads on steep slopes and roads in general are a permanent source of sediments to streams.

Project activities will increase road densities. Total linear road densities in BLM lands within the project area will increase from linear density of 4.35 mi/mi² to 4.94 mi/mi². Within the entire project area road densities would increase from 2.34 to 2.38 mi/mi². Within the Garnet (Chamberlain) area, road density will increase from 3.07 to 3.25 mi/mi^2 (Second Supplement to BA page 3). Quigley, et al. (1997) found the correlation between bull trout status classification and geometric mean road density was significant (p=0.0001) and negative for the arithmetic mean of upstream road density with bull trout being absent at a mean road density of 1.71 mi/mi^2, depressed at 1.36 mi/mi^2 and strong at 0.45 mi/mi^2. According to the 2020 Biop, *"The*

potential for roads to have detrimental effects on aquatic resources exists as long as the road is retained." (page 56). The 1998 USFWS Biological Opinion for bull trout states, *"there is no positive contribution from roads to physical or biological characteristics of watersheds. Under present conditions, roads represent one of the most pervasive impacts of management activity to native aquatic communities and listed fish species."* With an increase in already high road densities and possible failure from roads on steep slopes, project activities will affect bull trout.

How does the project comply with the conservation goal, *"Primary threats are effectively managed in 75 percent of simple core and 75 percent of complex core areas"* in the Columbia Headwaters Recovery Unit (CS vii)?

Project documentation does not demonstrate thorough analysis of the impacts of this project over a 15-year period or more on westslope cutthroat trout and other sensitive species. The design features do not include surveys or protections for sensitive species, nor does the appendix address sensitive species. Please demonstrate that project activities comply with the 2007 Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout and Yellowstone Cutthroat Trout in Montana.

The EA does not include analysis of soils nor does it plan any surveys to identify areas of important biological soil crusts. *"When found in the planning area, biological soil crusts will be protected through exclusion"* (page 121) *for mechanical and non-mechanical treatments. Direct ignition in these areas will also be avoided"* (page 121). No plans for surveys to identify these areas are included in project documentation. No map of soil crusts is provided. Please explain how these crusts will be identified. The RMP expects fragile soils to be identified. *"The BLM Land Health Standards (43 CFR 4180) address soil conditions. When activities are proposed, soils are subject to site-specific evaluation and environmental analysis to determine potential impacts*." (page 178).

Please describe how water quality in the project area will be analyzed and managed. Frissell (2014) states:

> *"Roads are ecologically problematic in any environment because they affect biota, water quality, and a suite of biophysical processes through many physical, chemical, and biological pathways (Trombulak and Frissell 2000, Jones et al. 2000). The inherent contribution of forest roads to nonpoint source pollution (in particular sediment but also nutrients) to streams, coupled with the extensive occurrence of forest roads directly adjacent to streams through large portions of the range of bull trout in the coterminous US, adversely affects water quality in streams to a degree that is directly harmful to bull trout and their prey. This impairment occurs on a widespread and sustained basis; runoff from roads may be episodic and associated with annual high rainfall or snowmelt events, but once delivered to streams, sediment and associated pollutant deposited on the streambed causes sustained impairment of habitat for salmon and other sensitive aquatic and amphibian species. Current road design, management of road use and conditions, the locations of roads relative to slopes and water bodies, and the overall*

density of roads throughout most of the Pacific Northwest all contribute materially to this impairment. This effect is apart from but contributes additively in effect to the point source pollution associated with road runoff that is entrained by culverts or ditches before being discharged to natural waters."

Project documentation must show compliance with the Memorandum of Understanding with the Montana Department of Environmental Quality toward meeting State water quality standards. At a minimum the EA should show that all riparian-wetlands in the project area meet or are making progress toward meeting proper functioning condition pursuant to 43 CFR 4180. Analysis of these areas should show that project activities will not affect proper functioning condition or progress towards it.

Climate Change is a major threat to bull trout and aquatic systems. Isaak et al. (2018) states,

"…for the majority of salmon and trout populations and species, we believe a more apt metaphor is a path through purgatory, as these fish continue attempting to adapt by tapping their remarkable stores of diversity and resilience. Current greenhouse gas emission rates may make their purgatory last for much of the 21st century, so concerted, ongoing, and strategic efforts by the conservation and management communities will be needed to assist in that adaptation."

The EA shows little analysis of the direct, indirect, and cumulative effects of climate change and no analysis of GHG emissions. The RMP addresses climate change:

The 2017 Montana Climate Assessment (Whitlock et al. 2017) findings predict reduced snowpack and an upshift in historical streamflow patterns due to rising temperatures. Higher spring temperatures will result in an earlier peak runoff and reduced snowpack at low to mid elevations. This, combined with declining overall snowpack, will result in lower late summer water levels that will cause additional stress to aquatic species. In addition, multi-year and decadal-scale droughts are expected to continue to be a natural feature of Montana's climate, further stressing aquatic resources.

Climate variability has the potential to affect future management decisions regarding aquatic species. Impacts, such as those listed above, could have drastic impacts to aquatic resources in the cumulative impacts analysis area. Rising water temperatures impacts could range from minor to substantial for species reliant on year-round cold water, such as bull trout and cutthroat trout, and create habitats more suitable for higher temperature-tolerant species like brown trout. Climate variability could fragment the large, interconnected cold water habitats that bull trout rely on. Declining snowpack and prolonged drought can de-water perennial streams, leading to reductions in suitable habitat for fish and amphibian life cycle stages (page 178).

Project documentation does not show a plan to extensively monitor aquatic systems in the area. Nor does it analyze the effects of climate change using current CEQ guidelines and scientific studies listed in the wolverine section.

Considering the effects of roads on aquatic systems, project documentation should have analyzed further an alternative with no road construction of any kind. This alternative was rejected only based on the loss of 29% of treatments. The benefits of no new roads and the overall impacts of the current road system are not considered.

How will construction of new roads impact hydrologic function? The EA says that the impacts will not be from roads but from their removal, and that impacts of these roads with undisclosed "mitigations" will continue to occur for 10 to 40 years. Yet this issue was not seen fit to analyze.

Not only should roads not be constructed on such steep slopes due to the risk of catastrophic failure they shouldn't be left there as a permanent source of sediments into designated critical habitat for bull trout.

North American Wolverine (wolverine)

Carnivore monitoring programs and the Natural Heritage Program have detected five wolverine in the project area and 149 wolverine within 20 miles of the project area in the last decade (EA page 59). According to Inman et al. (2013), the project area is within the Central Linkage Region which is highly important to wolverine metapopulation function, *"thus warranting collaborative strategies for maintaining high survival rates, high reproductive rates, and dispersal capabilities*" (EA page 60). Inman makes clear that this area is highly important and even dispersal areas must be maintained to allow metapopulation function. Project activities will affect habitat, dispersal, forage, and connectivity which will jeopardize the continued existence of wolverine.

Project activities would occur mostly in wolverine dispersal areas. 54.9% of the proposed treatment acres is in female dispersal and 100% in male dispersal areas (EA table 19). EA admits that *"Dispersal activities could be affected to some degree"* but continues that the areas are not suitable for home ranges or reproduction (page 65). EA does acknowledge that project activities would affect foraging but explains USDA FWS 2013 found that wolverine do not use dispersal areas for forage. The science and findings of USDA FWS 2013 was challenged in court and vacated. Please clearly demonstrate that wolverine do not use dispersal areas for forage and that disturbance from the project, both temporary and permanent, will not affect wolverine dispersal and connectivity.

Analysis for the FWS 2013 proposed rule did not find land management activities to substantially threaten the wolverine DPS (EA page 59). The science behind this analysis and the proposed rule was vacated in court. The Committee on the Status of Endangered Wildlife in Canada (2014 COSEWIC) found *"potential permanent, temporary, and functional losses to*

wolverine habitat to forestry." (page 21). Many direct and indirect effects occur with ground disturbing land management activities and prescribed burning. Project analysis must account for these impacts.

Use[3] of Coarse Woody Debris	Status[4]	English name (restrictions in distribution)[5]	Scientific name	Species code
Mammals (37 species)				
●		**Common Shrew**	*Sorex cinereus*	M-SOCI
●		**Pygmy Shrew**	*Sorex hoyi*	M-SOHO
●		**Dusky Shrew**	*Sorex monticolus*	M-SOMO
●		**Water Shrew**	*Sorex palustris*	M-SOPA
●		**Vagrant Shrew**	*Sorex vagrans*	M-SOVA
●		**Snowshoe Hare**	*Lepus americanus*	M-LEAM
●		**Southern Red-backed Vole**	*Clethrionomys gapperi*	M-CLGA
●		**Long-tailed Vole**	*Microtus longicaudus*	M-MILO
●		**Meadow Vole**	*Microtus pennsylvanicus*	M-MIPE
●		**Heather Vole**	*Phenacomys intermedius*	M-PHIN
●		**Bushy-tailed Woodrat**	*Neotoma cinerea*	M-NECI
●		**Deer Mouse**	*Peromyscus maniculatus*	M-PEMA
●		**Porcupine**	*Erethizon dorsatum*	M-ERDO
●		**Northern Flying Squirrel**	*Glaucomys sabrinus*	M-GLSA
?❍or●		Woodchuck	*Marmota monax*	M-MAMO
●		**Golden-mantled Ground Squirrel** (H)	*Spermophilus lateralis*	M-SPLA
●		**Yellow-pine Chipmunk**	*Tamias amoenus*	M-TAAM
●		**Red Squirrel**	*Tamiasciurus hudsonicus*	M-TAHU
●		**Meadow Jumping Mouse**	*Zapus hudsonius*	M-ZAHU
●		**Western Jumping Mouse**	*Zapus princeps*	M-ZAPR
?❍or●		Coyote	*Canis latrans*	M-CALA
?❍or●		Gray Wolf	*Canis lupus*	M-CALU
●		**Red Fox**	*Vulpes vulpes*	M-VUVU
●		**Cougar**	*Felis concolor*	M-FECO
●		**Lynx**	*Lynx canadensis*	M-LYCA
●		**Bobcat**	*Lynx rufus*	M-LYRU
●	Blue	**Wolverine**	*Gulo gulo*	M-GUGU
●		**River Otter**	*Lontra canadensis*	M-LOCA
●		**Marten**	*Martes americana*	M-MAAM
●	Blue	**Fisher**	*Martes pennanti*	M-MAPE
●		**Striped Skunk**	*Mephitis mephitis*	M-MEME
●		**Ermine**	*Mustela erminea*	M-MUER
?●		**Long-tailed Weasel**	*Mustela frenata*	M-MUFR
●	rare	**Least Weasel**	*Mustela nivalis*	M-MUNI
?❍or●		Mink	*Mustela vison*	M-MUVI
●		**Black Bear**	*Ursus americanus*	M-URAM
●	Blue	**Grizzly Bear**	*Ursus arctos*	M-URAR

1 Many Wildlife Tree users occasionally nest or roost in cavities in stumps short enough (i.e., <1.3 m) to be considered CWD-3 (see footnote 14 of Table 7). These species are not shown here unless they also use other Types of CWD.

2 Additional species use Coarse Woody Debris for other functions (see Addendum to Table 6).

3 ● = Obligate or frequent user of Coarse Woody Debris (52 species including "?●or❍") (comprises all species marked ■ or ◪ in at least one Type in Tables 7-1 to 7-6)
❍ = Occasional user of Coarse Woody Debris (26 species including "?❍or●")

4 Blue = Blue-listed in British Columbia (BC Environment 1998)
rare = rare in the SBS as well as in northern parts of the ESSF and ICH biogeoclimatic zones

5 See page 16-17 for a legend of restrictions in species distribution.

6 Includes Pacific-slope Flycatcher (*Empidonax difficilis*) and Cordilleran Flycatcher (*E. occidentalis*). For further information on taxonomy and status of these species, see Volume 3 of *The Birds of British Columbia* (Campbell et al. 1997).

According to Keisker (2000), Coarse Woody Debris (CWD) is important and used often by wolverine (see table above).

The supplement to the biological assessment originally submitted April 26 states that the proposed treatment would alter or delay the development of horizontal cover and remove coarse woody debris (page 9). This would degrade dispersal habitat and forage for wolverine.

The loss of CWD to wolverine would be detrimental, but project documentation does not analyze the effects. Nor does project documentation explain how often in the future maintenance burns would be required. EA page 63 promises no burning in lynx habitat, but EA page 19 implies the use of timber cutting combined with prescribed burning to create *"early stand initiation"* stages. Please be clear about the location, use, and frequency of prescribed burns throughout the project area.

Ground disturbance seems to be underestimated in the chart on page 17. EA states, *"In some cases, treatment objectives will overlap, as in the case where limber pine enhancement occurs within a Fuels Management treatment unit, or Fuels Management occurs within a Thinning treatment unit."* Please make clear how many acres would actually be treated and how many times by including overlapping treatments.

BLM managed lands are only 10% of the project area which is checkerboarded with DNRC and private lands, many owned by The Nature Conservancy. Both of these organizations log with reduced or a total lack of regulatory mechanisms. The federal government has the ability to protect the small portion of federally managed lands that house dispersal, primary, and denning habitat for wolverine. There would be no guarantee that wolverine habitat and movement would be preserved by private land owners and the DNRC. This project would degrade wolverine occupied areas in the only place where BLM could preserve them in the project area.

According to Ruggiero et al. (2007), Wolverine persistence is *"vitally dependent on regular, or at least intermittent, dispersal of individuals between habitat islands to facilitate gene flow between sub-populations."* Carroll et al. (2021) emphasizes the need for private land conservation to enhance wolverine dispersal, *"for many species, such as wolverines (*Gulo gulo*), species persistence and continued recovery to historical range hinge on successful dispersers or migrants crossing low-elevation private lands."* (Cegelski et al., 2006).Carroll removes public lands from analysis assuming that they are better protected. Project documentation proves otherwise.

EA page 65 states, "*Disturbance to male and female wolverine dispersal habitat would be temporary and occur at a scale much smaller than a wolverine home range or dispersal movement."* This statement conflicts with the findings of Carroll and Cegelski. McKelvey et al. (2011) finds, ***"****Wolverine in the contiguous U.S. represent a metapopulation, restricted to mountain environments and fragmented especially by developed private lands in valley bottoms. As snowpack decreases through the 21st century, contiguous U.S. wolverine populations are expected to become more fragmented and isolated."* (EA page 60). These studies make it clear that dispersal areas on public lands are vitally important to the persistence of the species.

Carroll (2021) found, *"In the Rocky Mountain West (RMW), protected conservation areas and long-term wildlife conservation have historically focused on high-elevation systems with little economic or agricultural value*." (Scott et al., 2001; Joppa and Pfaff, 2009). This focus has resulted in conservation areas being unbalanced, with well-represented high-elevation ecosystems but less well-represented low-elevation ecosystems (Scott et al., 2001; Dietz and Czech, 2005; Aycrigg et al., 2013). Lower to mid-elevation BLM lands like those in the project area are as vital to wolverine as lower elevation private lands. Saura et al. (2013) found:

> *"the loss of intermediate and sufficiently large stepping-stone habitat patches can cause a sharp decline in the distance that can be traversed by species (critical spatial thresholds) that cannot be effectively compensated by other factors previously regarded as crucial for long-distance dispersal."*

And Fisher et al. (2022) discussed the need for *"increased flexibility in wolverine selection during dispersal movements"* because *"it is important for metapopulation connectivity in this highly fragmented system. Unfortunately, there is some threshold at which wolverine dispersal movements are constrained that requires further investigation."* Without further investigation and evidence, it is irresponsible to assume that land management activities do not create constraints on wolverine movement in dispersal areas. As Carroll emphasized, *"Successful dispersal is critical for the species to continue occupying the available habitats and maintaining genetic diversity in the conterminous US*." (Kyle and Strobeck, 2001; Cegelski et al., 2006).

Land management activities include a variety of linear features including skid trails, yarding, firelines, roads, both temporary and permanent, and decommissioned roads. Fisher (2022) found, *"wolverine occurrence declined with density of anthropogenic landscape features, including roads, seismic lines, harvest cutblocks, and other industrial footprint* (Heim et al., 2017) – *with linear features the most pervasive feature driving wolverine occurrence."* Project activities are not benign to wolverine because they produce linear features.

According to the supplemental grizzly assessment, "Within the Garnet (Chamberlain) geographic area (as described in the MiFO RMP and associated BO), total motorized linear road density would increase from 3.07 to 3.25 mi/mi²" (page 1). In only 10% of the project area, BLM lands house 117 miles of system roads and 19 miles of undetermined roads. Project proposes 15.61 miles of permanent roads and 6.21 miles of temporary roads. There are no mechanisms in place to prevent road building in the 90% of the project area not controlled by BLM.

Scrafford et al. (2017) found *"roads, regardless of traffic volume, reduce the quality of wolverine habitats."* The study discovered that roads scarcely used by vehicles were deleterious to wolverine habitat suitability." In Fisher et al. (2022), *"two studies of over 40 radio-collared wolverines showed both sexes responded negatively to roads and motorized recreation*." (Lofroth and Krebs 2007).

EA and grizzly supplement page 2 claim the new roads would be closed to the public and temporary roads would be removed causing no effect to wolverine. Off-road vehicle technology can get around barriers and widely spaced trees in thinned forests making it easy to bypass closures and go off-roading. Even decommissioned temporary roads can be utilized as trails. The third supplement to the biological assessment page 2 claims *"nearly all proposed temporary roads would be located at the end of existing roads and would dead end."* The implication is that use would be limited and not affect grizzly bears. According to Scarpato (2013), even though most off road vehicle *"users know and understand that staying on-trail is an important limit on their activity, a majority of users prefer breaking new trail, most do so from time to time, and as many as one-fifth do so on a regular basis."* How many enforcement officers are available, how many off-road citations have been written, and how many off-road violations have been reported in the last 10 years in the project area? Illegal use has not been disclosed or analyzed. Instead, the June 2020 BiOp states, *"Under the existing condition, limited snowmobile use is allowed on 137,052 acres (84 percent of the action area), while 25,562 acres (16 percent of the action area) are closed to snowmobile use. Snowmobile use is limited to existing roads and trails."* On the Bitterroot National Forest, illegal motorized over snow use is common in elk winter range near the non-motorized Coulee trail.

Photo 3: Illegal oversnow vehicle track along non-motorized trail and then veering off to a ridge. Photo 12/2022

Considering the deleterious effects of linear features to wolverine and countless wildlife, it is surprising that project documentation neither considers nor analyzes an alternative with no

road building. The public is unable to discern whether a no roads alternative would be as beneficial as the current proposal.

With Missoula only five miles away, the project area is a popular recreation spot for thousands of people. The closed roads will enhance access for non-motorized recreation. Snowshoers and backcountry skiers will be able to use those new road miles to access higher elevations and more wolverine habitat. Fisher et al. (2022) found, *"Wolverines are vulnerable to multiple, widespread, increasing forms of human activity."* And in the Ontario boreal forest, Ray et al. (2018) suggested both road density and climate warming (thawing degree days had a negative effect on the probability of wolverine occupancy (page 9). The EA claims that recreation is expected to increase in the coming years but *"the proposed action is not expected to change levels of recreational use or create further barriers to dispersal."* (page 10). EA does not analyze the effects of widely spaced trees and closed roads to both non-motorized and motorized recreational use.

Barrueto (2022) found *"detection [of wolverine] probability also decreased with human recreational activity."* Project activities will expand human access both motorized and non-motorized. The EA cites Heinemeyer (2012), *"wolverine are able to adjust their use within home ranges to avoid disturbance*." (page 66). With more study, Heinemeyer (2019) found:

> *"significant avoidance of areas used by backcountry winter recreationists and that this results in habitat degradation, particularly for female wolverines. Given the low density and fragmented nature of wolverines in the contiguous United States, impacts to the relatively few reproductive females should be of concern."* (page 19).

Another effect of more access and more people in wolverine habitat was discovered by Chow-Fraser (2022).

> *"Wolverines failed to successfully occupy areas with linear features as these entrain `unsustainable competition via the coyotes that exploit them. Thus, landscape management aimed at minimizing linear feature density, decommissioning roads and trails, and restoring linear features (Tattersall et al. 2020b) are likely needed to conserve wolverine."*

The study found that even snowshoe paths, backcountry ski tracks and snowmobile trails packed the snow enough to allow coyotes into areas where they would not normally venture due to deep snow. These are places where wolverine had the advantage but must now compete for prey with coyotes. Table 2 shows the rate of species concurrence with linear feature densities.

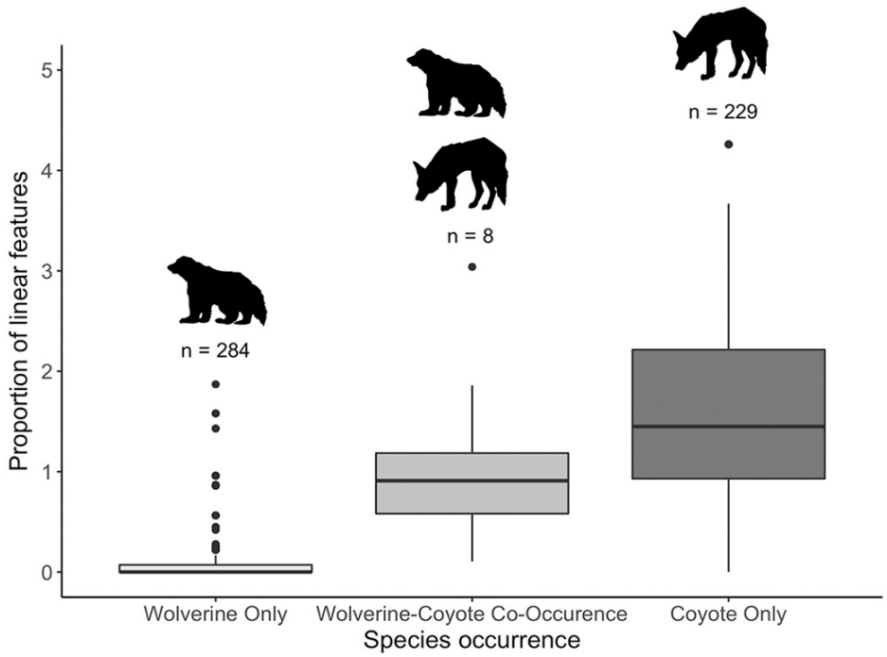


Table 2. Chow-Fraser 2022 species occurrence vs proportion of linear features.

New technology is another factor. Motorized recreation continues to evolve into highly powerful and maneuverable vehicles that access high elevation areas with deep snow, maternal habitat. Snow motorcycles can weave through tight trees creating easy motorized access to remote areas. Project activities would add roads, skid trails, and space trees for easy travel into higher areas of untreated forests occupied by female wolverine. This video gives an idea of the capabilities https://www.youtube.com/watch?v=R_byTMZY0xw&t=89s . Motorized snow bikes are a new threat to wolverine persistence and should be analyzed. Heinemeyer (2019) found, *"winter recreation should be considered when assessing wolverine habitat suitability, cumulative effects, and conservation."*

Increased trapping seasons in Montana will have an effect on wolverine in the project area but are not mentioned in project analysis. Though trapping of wolverine is not legal in the state, non-target captures are common. Incidental capture in Montana included 5 wolverines over a 6 year period from 2012 -2017 (Incidental Captures of Wildlife and Domestic Dogs in Montana 2012-2017, June 2018). That count was before the trapping season was extended in 2021 and trapping regulations were made more liberal on private lands, one can assume that more wolverines will be inadvertently caught in the project area with increased access and checkerboard private lands. Montana does not have a 24-hour mandatory trap check, so it is highly probable that incidental captures will result in mortality. *"Trapping disproportionately impacts younger wolverines that are most likely to constitute the dispersers that… ensure connectivity with the lower-48 population."* (Mowat, et al. 2019).

Recent court proceedings showed that climate change and lack of regulatory mechanisms to curtail it is one of the greatest threats to wolverine. The EA barely mentions climate change,

"Changes due to climate change may be difficult to predict but will likely include decreased snowpack and snow persistence and changing fire and summer drought regimes." (page 9). This proposal calls for cutting of mature and old growth forests and returning them to earlier forest stages (EA page 19). A recent letter to congress by hundreds of scientists stated, *"logging in U.S. forests emits 723 million tons of uncounted CO2 into our atmosphere each year—more than 10 times the amount emitted by wildfires and tree mortality from insects combined*." (Moomaw 2020). President Biden recently created Executive Order 14072 calling for the preservation of mature and old growth forests to combat climate change. It also called for an inventory of mature and old growth forests. An alternative that does not cut mature and old growth forests is not considered and no map of mature and old growth forests in the project area is provided.

Mature and old growth forests create high quality habitat. The reset to stand initiation will provide lower quality habitat than what already exists. BLM only manages 10% of the project area, the remainder is state and privately owned with no protections for mature and old growth forests and habitat vital to wolverine. Project documentation does not consider the possibility that mature and old growth forest habitat along with important carbon stores could and will most likely be logged in the remainder of the project area. BLM must protect the mature and old growth forests in the 10% of the project area that it manages in order to comply with EO 14072. The other 90% of the project area has no protections, nor incentives to preserve mature and old growth forests vital to carbon stores.

Project documentation does not show that analysis has been conducted as per guidance by the CEQ. EA should consider the GHG emissions and climate change using the *Final Guidance for Federal Departments and Agencies on the Consideration of Greenhouse Gas (GHG) Emissions and the Effects of Climate Change in NEPA Reviews* (August 1, 2016). There are also excellent resources available to analyze effects like the Fourth National climate Assessment, The EPA's Climate Change Indicators, and the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. These references and CEQ guidance should be used to analyze the direct, indirect, and cumulative climate related impacts associated with project activities. An assessment of projects effects to wolverine would not be complete without a hard look at the direct, indirect and cumulative climate related impacts of the project.

Fire is often the excuse to ignore detrimental effects. The remote chance of fire destroying mature forests cannot possibly counteract the effects of most assuredly decimating these forests and removing the carbon stores that would remain even after a severe burn in the project area. Wolverine use early-stage forests and have been seen in severe burns with downed old growth remnants after 30 years (Slough and Mowat 1996, p. 948), but that does not equate to mechanically produced early-stage forests. Soil is compacted by machines, weeds overtake native grasses, downed woody debris is burned off, and all trees are removed leaving no snags to fall in the future. It is not the same as naturally created, early successional forests. Project analysis relies heavily upon but does not fully comply with the Missoula Field Office 2020 Resource Management Plan (RMP). The biological opinion found that the project would not jeopardize the continued existence of wolverine (EA page 54) based on USFWS species

assessments in 2013 and 2018. The former was vacated in court and the latter was voluntarily rescinded in court proceedings. The biological opinion did find the project was likely to adversely affect grizzly bears, lynx and lynx critical habitat. Since grizzly, lynx, and wolverine share the same aversion to roads and use intact mature forests, it seems likely that this project will adversely affect wolverine. Yet, no alternatives were analyzed that might protect all three species by eliminating road-building and leaving mature and old growth forests intact.
This project would put proposed wolverine in jeopardy by deterring population dispersal, forage capacity, reducing and in some areas eliminating coarse woody debris, encouraging competition, and increasing access for trappers and outdoor recreation. Project documentation does not fully analyze effects of global warming or project effects to climate change.

Avian Species

In Appendix F, Design Features, 11.0.14 *Terrestrial wildlife: Big Game, Sensitive species*, numbers 5 the EA states:

5. Vegetation treatments would discontinue and potentially be modified in areas were [sic] an active eagle, goshawk, great gray owl, or flammulated owl nest is discovered and resume after the nesting season.

While the identification of specific species is helpful, there are concerns tied to this plan for protection of their nests:

- The table in Appendix I indicates that in 2016 Swan Valley Connections was contracted by the USFS to do surveys of Flammulated Owls "at several sites on the Flathead National Forest in the Swan Valley, Tally Lake area, and near the South Fork of the Flathead River" (Goodhart and Lamar). Further, the table indicates that data from the Montana Natural Heritage Program, which is the source of the "Indirect Evidence of Breeding" [info] in the table. As useful as the field guide produced by MNHP, in collaboration with MFWP, for general information about location of bird activity it is not specific enough to help forest managers avoid disturbing nesting raptors.

- Will people on the ground, those who are actually carrying out identified treatments, be able to identify nests of these species? For example, will they be able to distinguish between a Nortern Goshawk nest and a Cooper's Hawk or other raptor or even a Common Raven nest? And Flammulated Owl nests are notoriously difficult to find, even for avian scientists. In an article by Chad Witko, Audubon's Senior Coordinator, Avian Biology, discusses Dr. Scott Yanco's work on Flammulated Owls and writes, *"In a place like the San Juan Mountains in southwest Colorado, Yanco and his associates could check 1000 to 2000 cavities and maybe find ten Flammulated Owl nests."* Closer to home, the Owl Research Institute, based in Charlo, Montana, reports on their Flammulated Owl Research Project: *"During this four-year study, we have found it fairly easy to detect singing Flammulated Owls, pinpointing 18 separate territories. More difficult is finding nests. So far, with extensive searching, we have discovered four"* ("Research Focus:

Flammulated Owls"). The difficulty of finding Flammulated Owls nests suggests that detection of the owls should require only hearing them, not finding their nests. In a Revised Wildlife Effects Analysis for the Bitterroot National Forest's Mud Creek Project (for which a final ROD is expected in March 2023), dated June 10, 2021, the EA says, *"Ground-disturbing activities in known areas of flammulated owl use would not occur from May 1through August 15 (EA, Appendix A), to reduce the potential for disturbance to breeding owls* ***in or near areas where flammulated owls have been detected***" [emphasis added] (Mud Creek Vegetation Project page 17). The protection afforded Flammulated Owls by non-experts attempting to identify the owls' nests while also carrying out treatment is minimal or nonexistent.

•We believe that new surveys of the raptors identified in this section of the EA should be undertaken before management activities begin. For Flammulated Owls, we recommend the Partners in Flight-Western Working Group Flammulated Owl Survey Protocol. New surveys would also minimize the possibility of discontinuation and modification of treatments after those treatments have already begun. Further, protection should be given where Flammulated Owls are detected, meaning heard, rather than only where a nest is discovered.

In Appendix F, Design Features, 11.0.15 *Migratory Birds*, the EA states:

1. *Follow the Missoula RMP (USDI-BLM 2021) Appendix P. DF-32.*
2. *On a case-by-case basis, considering the habitat dependent [sic] variables, a timing restriction may be implemented to protect migratory bird [sic] nesting in specified areas as determined by the wildlife biologist.*

Given that the EA, in Appendix I, page 140, says that at least *"40 migratory bird species inhabit the planning area during the nesting season,"* we would like more detail for this Design Feature. Unfortunately, the Missoula RMP to which the EA refers adds no specificity: *"DF-32. If migratory birds are present, implement project design features to avoid or minimize impacts from ground disturbing activities."* Among those 40 species are five that are Native and Montana Species of Concern (Flammulated Owl, Northern Goshawk, Pileated Woodpeckers, Clark's Nutcrackers, and Cassin's Finches). Appendix I offers broad statements about impacts of the project on these 40 migratory species. While discussing each of the 40 would result in redundancy, please modify Design Features for the Flammulated Owl and develop Design Features, including recent surveys, to protect the other four Montana Species of Concern.

In Appendix I of the EA, Wildlife Issues Considered but Not Analyzed in Detail, the Flammulated Owl section says, *"Following wildlife design features to protect flammulated owl nests would offset adverse effects [of treatment activities]"* (page 140). As discussed above, there are deficiencies in the Design Features planned to protect the small owls. Further, the same section indicates that *"abundance of adjacent untreated forest would provide foraging habitat, minimizing adverse effects"* (page 140). However, as the section says, *"Effects to nesting owls would occur from thinning, timber harvest, and mastication"* and *"Activities during nesting season would disturb flammulated owls potentially causing nest abandonment"* (page 140).

Nest abandonment is particularly serious for this species, which usually lays only 2-3 eggs per brood and therefore reproduces "at an abnormally slow rate" ("Research Focus").

In addition, management activities could have impacts to Flammulated Owls beyond the loss of one year's nests. According to the Owl Research Institute, *"Flammulated Owls are very particular when it comes to picking a nest site and habitat. This makes the species extremely vulnerable to small habitat and ecosystem changes"* ("Research Focus"). Further *"74% of pairs kept the same mate for consecutive nesting seasons and* ***used the same nest territory as previous seasons"*** [emphasis added] ("Research Focus." Such sensitivity and territorial loyalty in this species call for very careful surveys and identification of Flammulated Owl nesting habitat; the Design Features developed to protect nesting owls fall short, as indicated above.

Cumulative Impacts of Livestock Grazing

Another concerning aspect of the Clark Fork Face EA is the fact that it essentially ignores the cumulative impacts of livestock grazing in the project area. The most that livestock grazing is even mentioned is as an "Issue Identified but Eliminated from Further Analysis." This section states that:

> *"Forest improvement and fuel reduction projects generally do not have negative impacts on livestock grazing. This is both because the season of vegetation treatment operations (summer and winter) generally does not coincide with livestock season of use, and livestock are not generally affected by machinery operations. Additionally, portions of the proposed treatments are located in areas not currently grazed by livestock."*

This statement assumes that the only thing to consider is how the "treatment" might impact livestock grazing, but fails to recognize that the impacts of livestock grazing on the project area must be considered as cumulative effects. Livestock grazing has substantial impacts on an ecosystem and these impacts cannot be ignored in conjunction with a massive scale project that will undoubtedly impact sensitive species, water quality, and vegetation health. It is also interesting that BLM claims that "portions of the proposed treatments are located in areas not currently grazed by livestock" EA at 13. This is something that must be clarified. When taking a quick look at the BLM grazing allotment map, one can see clearly that there are fourteen grazing allotments that overlap with areas proposed for treatment (Figure 1).

BLM Clark Fork Face (CFF) Proposed Actions Map With Grazing Allotments Within the Project Area Overlaid

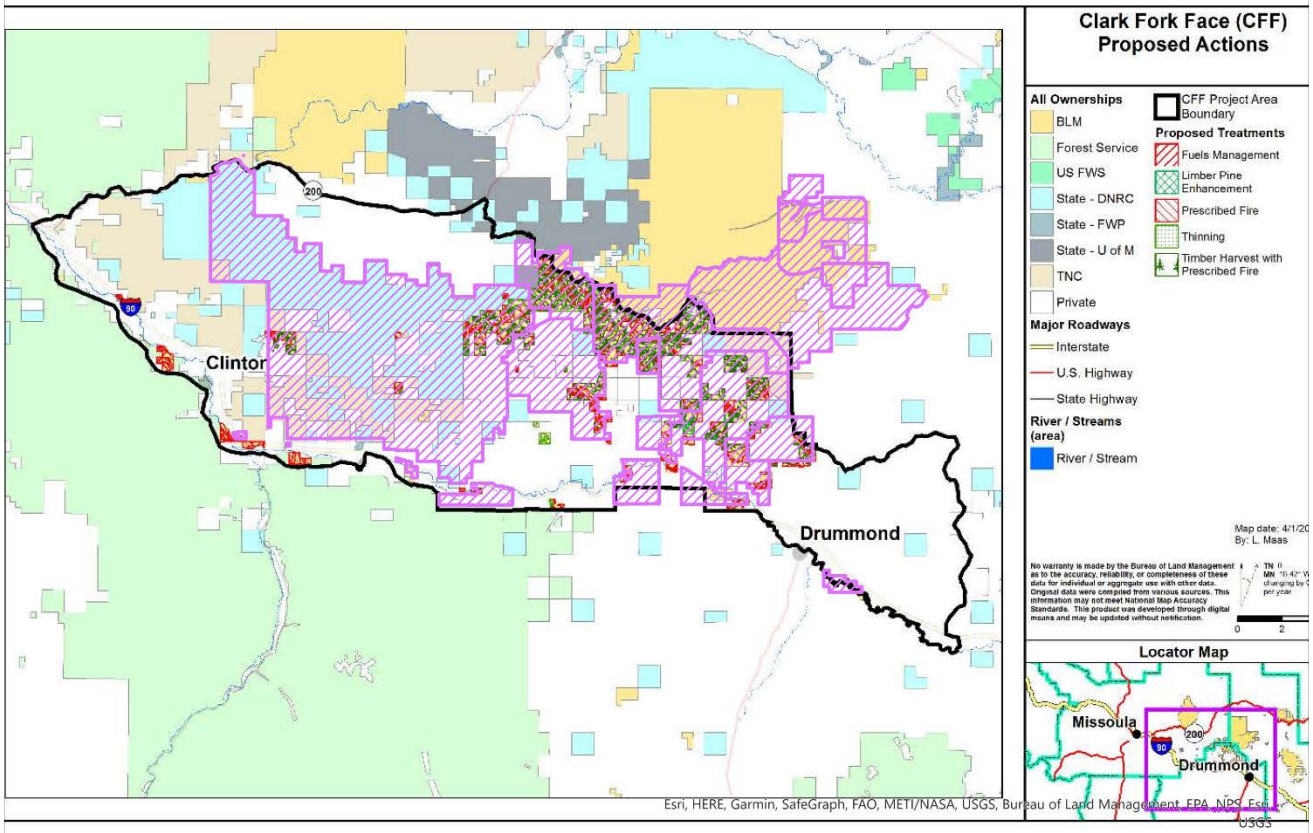


Figure 1. BLM map from the EA of the CFF proposed actions with grazing allotments in the area overlaid in pink. It is clear that despite the lack of grazing info in the EA, there is substantial overlap between proposed treatment areas and grazing allotments.

While two of these allotments are currently vacant, that still leaves twelve livestock grazing allotments that overlap areas of potential treatment. Even more concerning, is that most of these grazing allotments have not received an adequate assessment in recent years to even understand the current conditions as they relate to livestock grazing.[1] Four of the allotments (Medicine Tree, Coloma, Dry Mulkey, Bearmouth) that overlap the project area and are currently grazed had grazing permit renewals through the Federal Land Policy and Management Act 402 (c)(2) provision which simply renews a grazing permit without any NEPA analysis or on the ground assessment of conditions. In addition, two of the currently grazed allotments (King Mountain, Spring Gulch) that overlap the project area and proposed treatment area were not meeting land health standards due to current livestock grazing at the time of their last NEPA assessment in 2006.

[1] BLM Rangeland Health Status (2020)- The Significance of Livestock Grazing on Public Lands. [map]. 1997-2019. Public Employees for Environmental Responsibility; "Interactive Rangeland Health Geospatial Data Portal. https://peer.org/areas-of-work/public-lands/grazing-reform/mapping-rangeland-health/

This all shows a concerning trend including a lack of awareness of on-the-ground conditions, as well as a lack of awareness of cumulative impacts. On its own, livestock grazing can cause significant damage to natural resources. For example:

- Livestock graze and trample native plants which clears vegetation and destroys soil crusts; all contributing to weed invasion. This prepares weed seedbeds through hoof action. Additionally, livestock transport and disperse seeds on their coats and through their digestive tracks.[2]
- Without disturbance to native plants, microbiotic crusts, and soils resulting from livestock grazing and trampling, and corresponding increases in light, water, and nutrients for the remaining weeds, it is doubtful that alien plants would have spread so far or become so dense. At least they would not be invading as rapidly, and certainly not over the vast area of western grasslands, shrublands, and woodlands as they are now.[3]
- In central Washington, grazing was responsible for changing the physical structure of ponderosa pine forest from an open, park-like tree overstory with dense grass cover to a community characterized by dense pine reproduction and lack of grasses.[4]
- The Oregon-Washington Interagency Wildlife Committee, composed of biologists from several government agencies, concluded that grazing is the most important factor in degrading wildlife and fisheries habitat throughout the 11 western states.[5]

It is particularly important to consider the potential for weed spread throughout the project area. Logging and road building are well known to increase weed expansion as is livestock grazing. Having increased impact from logging, thinning, and burning operations in the area with no adjustment to livestock grazing is a recipe for disaster as far as weed spread is concerned. In fact, a typical management practice is to remove livestock grazing from any area for at least two years following any such treatments. While this should be considered at the absolute bare minimum, it is telling that this common practice is completely ignored in the EA. Without time to allow native plant regeneration prior to the reintroduction of livestock will almost certainly undo any purported habitat benefits.

Livestock grazing also has significant impacts on riparian areas that must be considered as cumulative impacts. Although riparian areas account for less than 2% of the West's total land area, they provide habitat for approximately one-third of the plant species. It is particularly

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[2] Belsky, A. J., & Gelbard, J. L. (2000). *Livestock grazing and weed invasions in the arid West*. Portland: Oregon Natural Desert Association.

[3] Ibid.

[4] Fleischner, T. L. (1994). Ecological costs of livestock grazing in western North America. *Conservation biology*, *8*(3), 629-644.

[5] Ibid citing: Oregon-Washington Interagency Wildlife Committee. 1979. Managing riparian ecosystems for fish and wildlife in eastern Oregon and eastern Washington. Oregon-Washington Interagency Wildlife Committee, available from Washington State Library, Olympia, Washington.

important to pay attention to these impacts given the amount of bull trout and bull trout critical habitat within the project area. For example:

- Cattle spend a disproportionate amount of time in riparian areas and can cause significant degradation from streambank trampling, stream widening, sedimentation, and an increase in stream temperature.
- As much as 81 percent of the forage in an allotment can come from 2 percent of the area occupied by a riparian zone.[6]
- Livestock grazing has damaged 80 percent of the streams and riparian ecosystems in the arid West[7] and nearly all surface waters in the West contain harmful waterborne bacteria and protozoa such as Giardia due to contamination from livestock waste.[8]

While the EA claims that there will be no impacts to riparian areas or streams within the project area due to the use of best management practices, some of those practices simply describe things such as avoiding placing firefighting operations within RHCA's "to the extent practicable." This does not inspire confidence that impacts from the proposed project won't exacerbate existing impacts caused by livestock grazing in sensitive riparian areas.
Livestock grazing also has impacts on native carnivores within the project area. When grizzly bears or wolves kill livestock, these predators are often killed in response. However, the EA completely glosses over this fact because "this has not occurred in recent years in the area" EA at 68. Due to the documented expansion in grizzly bear habitat and the impacts to grizzly bear habitat that would be caused by the proposed project, it is not a stretch to think that grizzly bears may kill livestock in the project area in the near future. This must be factored into the cumulative effects analysis.

Finally, BLM must disclose if the proposed treatments would increase the permeability of forests and increase the growth of grasses and how that might alter the use of the land by livestock. Currently, it is stated that livestock grazing does not have an impact on Canada lynx because they do not frequent the forest type used by lynx. However, will this proposed project change that?

Livestock grazing has clear impacts that overlap with the likely impacts of the proposed project. In fact, in many areas, livestock grazing clears grass and shrubs in a way that allows for the explosive growth of trees in the understory. This contributes to conditions that this EA finds as the need for the proposed project. Livestock grazing's impacts are inextricably linked to the on-

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[6] Kauffman, Boone. 2002. Lifeblood of the West—Riparian Zones, Biodiversity, and Degradation by Livestock. In Welfare Ranching: The Subsidized Destruction of the American West Edited by George Wuerthner and Mollie Matteson.
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the-ground conditions and will continue to play a role in the recovery from proposed actions. Because of this livestock grazing must be considered in conjunction with the impacts of the proposed project.

Other Issues Eliminated From Further Analysis.

Soils, unstable soils, and soil crusts

The EA states that these will not be analyzed because they will be avoided during treatment layout. BLM states the vast majority of new road construction for this project are permanent, not temporary roads, because they are on slopes > 45%. Slopes 45% are not likely to have stable soils, so we would like to see that analyzed.

We would like more info on how they know where soil crusts are and how they will skillfully avoid those soil crusts. There are no planned soil crust surveys and there is no soil crust map. The Appendix states that these will be protected "when found" but no one is actually looking.

Effects on big game species and their habitat, specifically winter range, disturbance/displacement, and forage availability

The EA says only that design features will be implemented. The list of design features given in an appendix largely have little to do with big game and say nothing specific that would be done for this project. There is no mention of surveys, corridors, etc. The extensive road-building with this project may well impact elk, and the BLM chose not to analyze this in detail, nor any other sensitive fish, wildlife or plant issues.

No project-specific surveys or protections are listed in the design features or planned in the appendix addressing sensitive species. Instead it is repeatedly stated that the RMP will protect these.

The rest of this section tends to vaguely mention that design features or BMPs exist but doesn't say what those are or why they would work. This is not an adequate description of reasoning as to why these important issues were not analyzed.

EIS

Due to the level of significance and controversy, an Environmental Impact Statement must be prepared or the Project dropped by adopting the No Action Alternative. Formal consultation must be reinitiated. There are three ESA listed species, one eligible for listing, designated critical habitat for lynx and bull trout and NCDE Zone 1 for grizzly bears. There is significant controversy over the purpose and need, the cited science behind the proposal and lack of

analysis of important components of the issue. Because the biological analysis found this project is Likely to Adversely Affect grizzly bears, lynx, and lynx critical habitat, and will adversely affect wolverine which are eligible for ESA listing, an Environmental Impact Statement must be prepared. The Biological Opinion for this Project is insufficient and not in compliance with ESA Section 7 regulations and must be amended.

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