June 5, 2023, Via Email

Objection against the Draft Decision Notice (DDN), FON-SI, and Environmental Assessment for the Forest Plan Amendment - Elk, Old Growth, Coarse Woody Debris and Snag Forest Plan Components, Bitterroot National Forest

Identification of Objectors:

Lead Objector: Michael Garrity, Director, Alliance for the Wild Rockies (AWR)

PO Box 505

Helena, MT 59624;

Phone 406-459-5936.

And for

Sara Johnson

Native Ecosystems Council

PO Box125
Willow Creek, MT 59760.

And for

Jim Miller, President
The Friends of the Bitterroot
Hamilton, MT 59840
millerfobmt@gmail.com

And for

Jeff Juel
Montana Policy Director
Friends of the Clearwater
509-688-5956
jeffjuel@wildrockies.org

And for

Adam Rissien
Rewilding Manager
WildEarth Guardians
406-370-4147
www.wildearthguardian.org
arissien@wildearthguardians.org

And for
Steve Kelly, Executive Director Council on Wildlife and Fish

P.O. Box 4641
Bozeman, MT 59772

And for

Kristine Akland

CENTER FOR BIOLOGICAL DIVERSITY

P.O. Box 7274

Missoula, MT 59807

Signed for Objectors this 5th day of June 2023

/s/ Michael Garrity

Michael Garrity (Lead Objector)

Name of the Responsible Official, Bitterroot National Forest, Ranger District where the Amendments are proposed:

The Responsible Official for the forest plan amendments is the Bitterroot National Forest (BNF) Supervisor Matt An-Bitterroot National Forest which is in Ravalli County, Montana.

Description of those aspects of the proposed amendments addressed by the objection, including specific issues related to the proposed amendments if applicable, how the objector believes the environmental analysis, Finding of No Significant Impact, and Draft Decision Notice (DDN) specifically violates law, regulation, or policy: The EA and Draft Decision Notice (DDN) are contained in the USFS webpage at: https://www.fs.usda.gov/project/bitterroot/?project=57302

Forest Supervisor Matt Anderson approved the amended components as modified in Alternative C. Alternative C is inclusive of the components and glossary items in Alternative B, except as modified in Alternative C.

1. Objectors names and addresses:
   Lead Objector Mike Garrity, Executive Director, Alliance for the Wild Rockies
   P.O. Box 505: Helena, MT 59624
   Phone 406 459-5936

And for

Sara Johnson

Native Ecosystems Council

P.O. Box 125

Willow Creek, MT 59760

And for

Jim Miller, President
The Friends of the Bitterroot
Hamilton, MT 5984
millerfobmt@gmail.com

And for

Jeff Juel
Montana Policy Director
Friends of the Clearwater
509-688-5956
jeffjuel@wildrockies.org

2. Signature of Lead Objector:

Signed this 5th day of January 2023 by Lead Objector,

/s/ Michael Garrity

3. Lead Objector: Michael Garrity, Alliance for the Wild Rockies

4. Name of the Proposed Amendments, Responsible Official, National Forest and Ranger District where Amendments is: Forest Plan Amendment - Elk, Old Growth, Coarse Woody Debris and Snag Forest Plan Components, Bitterroot National Forest; Bitterroot National Forest (BNF) Supervisor Matt Anderson is the Responsible Official; The forest plan covers the entire Bitterroot National Forest System (NFS) lands. The Bitterroot National Forest comprises 1.587 million acres (6,423 km²) in west-central Montana and eastern Idaho, of the United States. It is located primarily in Ravalli County, Montana (70.26% of the forest), but also has acreage in Idaho County, Idaho (29.24%), and Missoula County, Montana (0.49%)..

.

Supervisor Anderson chose the amended components as modified in Alternative C. Alternative C is inclusive of the components and glossary items in Alternative B, except as modified in Alternative C.

NOTICE IS HEREBY GIVEN that AWR objects pursuant to 36 CFR section 219 to the Responsible Official's adoption of the selected Alternative. As discussed below, the the Forest Plan Amendment - Elk, Old Growth, Coarse Woody Debris and Snag Forest Plan Components as proposed violates the Clean Water Act, the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the Endangered Species Act (ESA), the Bitterroot Forest Plan and the Administrative Procedure Act (APA).

Location

Forest Plan Amendment - Elk, Old Growth, Coarse Woody Debris and Snag Forest Plan Components for the Bitterroot National Forest.

.

5. Specific Issues Related to the Proposed Amendments, including how Objectors believes the Environmental Analysis or Draft Record of Decision specifically violates Law,

Regulation, or Policy: We included this under number 8 below.

Thank you for the opportunity to object to the Forest Plan Amendment - Elk, Old Growth, Coarse Woody Debris and Snag Forest Plan Components for the Bitterroot National Forest.

Please accept this objection from me on behalf of the Alliance for the Wild Rockies, Council on Wildlife and Fish, Native Ecosystems Council, Center for Biological Diversity, Friends of the Bitterroot,Friends of the Bitterroot, and Wildearth Guardians.

6. Suggested Remedies that would Resolve the Objection:

We recommend that the draft decision be withdrawn and an EIS be written for the proposed amendments. We have also made specific recommendations after each problem.

7. Supporting Reasons for the Reviewing Office to Consider:

This Bitterroot National Forest has very high wildlife values, including for the threatened grizzly bear, lynx, bull trout, big game species, and wildlife dependent upon un-

logged forests. The BNF have some of the best wildlife habitat in this landscape which is an important travel corridor for wildlife such as lynx, grizzly bears, and wolverine. The agency will also be exacerbating an ongoing problem of displacing elk to adjacent private lands in the hunting season due to a lack of security on public lands. The public interest is not being served by the proposed amendment.

Suggested Remedies to Resolve the Objection:

We recommend that the "No Action Alternative" be selected. We have also made specific recommendations after each problem.

Supporting Reasons for the Reviewing Office to Consider

This landscape has very high wildlife values, including for the threatened grizzly bear, and lynx, big game species, and wildlife dependent upon mature forest habitat. The amendments area covers the entire BND which has some of the best wildlife habitat in this landscape which is an important travel corridor for wildlife such as lynx, grizzly bears, and

wolverine. The agency will also be exacerbating an ongoing problem of displacing elk to adjacent private lands in the hunting season due to a lack of security on public lands. The public interest is not being served by this amendment.

Thank you for the opportunity to object.

NOTICE IS HEREBY GIVEN that, pursuant to 36 CFR Part 219, AWR objects to the Draft Decision Notice (DDN) and Finding of No Significant Impact (FONSI) with the legal notice published on April 21, 2023, including the Responsible Official's adoption of amendments.

Alliance is objecting to these amendments on the grounds that implementation of the Selected Alternative is not in accordance with the laws governing management of the national forests such as the FLPMA, ESA, NEPA, NFMA, and the APA, including the implementing regulations of these and other laws, and will result in additional degradation in already degraded watersheds and mountain slopes, further upsetting the wildlife habitat, ecosystem and human communities. Our objections are detailed below.

If the amendment is approved as proposed, individuals and members of the above-mentioned groups would be directly and significantly affected by the logging and associated activities. Objectors are conservation organizations working to ensure protection of biological diversity and ecosystem integrity in the Wild Rockies bioregion (including the BNF). The individuals and members use the BNF for recreation and other forest related activities. The selected alternative would also further degrade the water quality, wildlife and fish habitat. These activities, if implemented, would adversely impact and irreparably harm the natural qualities of the BNF, the surrounding area, and would further degrade the watersheds and wildlife habitat.

Statements that Demonstrates Connection between Prior Specific Written Comments on the Particular Proposed Amendments and the Content of the Objection.

Whitebark Pine

We wrote in our comments:

- ***The BNF includes whitebark pine. How will the proposed amendments to the old growth definition of the Forest Plan***

effect white bark pine? Please consult with the FWS on the impact of the proposed amendments on Whitebark pine.

The Forest Service did not respond to our comments in violation of NEPA.

Please see the attached memo from the FWS about requirements for consulting with the FWS about whitebark pine now that they are listed as threatened.

It is also a violation of NFMA, the APA and the ESA to not consult with the FWS and to not ensure a viable population of whitebark pine.

REMEDY

Formally consult with the FWS on the Forest plan and the Forest Plan amendment in regards to their effect on whitebark pine.

Old Growth

We wrote in our comments:

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. How will the proposed amendments to the definition of old growth effect pine martins and pileated woodpecker, the MIS for old growth under the Forest Plan?

Please provide the latest monitoring results for pine martins and pileated woodpecker.

Please include the include the following scientific papers in your analysis.

https://www.fs.fed.us/rm/pubs_exp_forests/coram/rmrs_1977_mcclelland_b001.pdf

https://www.fs.fed.us/rm/pubs_exp_forests/coram/rmrs_1980_mcclelland_b001.pdf

Habitat suitability index model for northern Rocky Mountain pileated woodpeckers . School of Forestry , University of Montana , Missoula . 31 pp . Aney , W. C. ,

_____

_____

_____

_____

and B. R. McClelland . 1990. Pileated woodpecker habitat relationships .

Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the BDNF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the BDNF. It is also of paramount importance to monitor population during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

The U.S. District Court in Montana ruled in Native Ecosystems Council vs. Kimbell on the Keystone Quartz project that the Forest Service presented no hard data to support or demonstrate the biological impact on old-growth species viability across the forest of further reducing Douglas-fir old-growth habitat below minimum forest plan standards, which themselves may be inadequate in light of more recent scientific information. Species in the Northern Region, including the BNF, thought to prefer old-growth

---

habitat for breeding or feeding include northern goshawk, flammulated owl, pileated woodpecker, black-backed woodpecker (after wildfire or beetle epidemic), fisher, marten, Canada lynx, and wolverine. How will the proposed amendmentss to the Forest Plan effect these species?

For the BDNF, sensitive old-growth dependent species include the Pine Martine and pileated woodpeckers. According to official FS policy, the BDF "must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by the forest plan or a proposed amendments." FSM 2670.45. These strategies would address the forest-wide and range- wide conditions for the affected species, allowing site- specific viability analysis to be tiered to the forest-wide viability analysis, and would establish quantifiable objectives for the affected species. These strategies must be adopted prior to implementation of amendments that would adversely impact sensitive species habitat. FSM 2622.01, 2670.45.

Please demonstrate that this proposed amendments will leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such

as flammulated owls and goshawks. Loggers are required to follow OSHA safety standards. Will these standards require snags to be cut down? After snags are cut down for safety for OSHA requirements will there still be enough snags left for old growth sensitive species?

Specifically how will the proposed amendmentss effect Flammulated owls, cavity-nesters usually associated with mature stands of ponderosa pine and Douglas-fir? Among other habitat characteristics, flammulated owls benefit from an abundance of large snags and a relatively dense under- story. The flammulated owl is a sensitive species in Region One, and is largely dependent on old ponderosa pine forests. According to a 2002 Region-wide assessment, not referenced in the 2003 FEIS for the Project, such forests only occur at 12-16% of their former, pre-fire suppression/ pre-logging (that is, "historic") levels, and thus species viability has been determined to be at risk. The Northern Region also recognizes that its strategy for restoring habitat for the flammulated owl and found in the Island South project that "in no way guarantees that flammulated owls will be restored to viable levels."

Snag densities recommended by experts to support cavity-nesting birds range from 2.1 to 11 snags per acre of greater

than 9" dbh. Please note that the fact that more recent science has called into question the lower snag densities cited in the earlier research, and the more recent science implies that about 4 snags per acre may be the minimum required to insure viability.

What surveys has the BNF specifically designed to detect flammulated owls? The FS has not developed a conservation strategy for the flammulated owl in the BNF, or in the Northern Rockies. Absent an appropriate landscape management strategy for insuring their viability, based

upon the best available science, it is arbitrary and capricious to dismiss potential impacts on the ground where the FS has failed to conduct the kind of comprehensive surveys that would reveal their presence. This convenient excuse for not protecting for a species that is becoming exceedingly rare, a strategy of managing for extinction (since protection premised on detection affords greatest protection to the species that least need it) has been condemned by the FS's own leading expert in the northern region, Mike Hillis:

With the exception of the Spotted Owl..., the U.S. Forest Service has not given much emphasis to owl management. This is contrary to the National Forest Management Act of 1976 (NFMA) which mandates that all wildlife species be managed for viable populations. However, with over 500 vertebrate

species this would be difficult for any organization. Recognizing the absence of detailed information on owl habitat, the apparent association of owls with snags, mature, and old-growth timber (both rapidly declining), it seems inconsistent that the U.S. Forest Service has placed little emphasis on owl management. One might conclude that the agency's painful experiences with the Spotted Owl in Oregon and Washington have evolved into a 'hear no evil, see no evil' approach for other forest owls as well.

The NPCNF's Lolo Insect & Disease DEIS states: "The nest tree is the most important variable to estimate breeding habitat use by the pileated woodpecker (Kirk and Naylor 1996, Giese and Cuthbert 2003) ...The mean DBH of

nest trees was 33 inches. ...Nest trees averaged 28 inches DBH." (Emphases added.)

Bull et al., 2007 compare the effects of natural disturbance with large-scale logging on pileated woodpeckers. Also see Bull et al., 1992, Bull and Holthausen, 1993, and Bull et al., 1997 for biology of pileated woodpeckers and the habitats they share with cavity nesting wildlife.

Lorenz et al., 2015 state:
Our findings suggest that higher densities of snags and other nest substrates should be provided for PCEs (primary cavity excavators) than generally recommended, because past research studies likely overestimated the abundance of suitable nest sites and

underestimated the number of snags required to sustain PCE populations. Accordingly, the felling or removal of snags for any purpose, including commercial salvage logging and home firewood gathering, should not be permitted where conservation and management of PCEs or SCUs (secondary cavity users) is a concern (Scott 1978, Hutto 2006).

The implication is clear: managers know little about how many snags per acre are needed to sustain populations of cavity nesting species. Only the birds themselves have the capability to decide if a tree is suitable for excavating. The EA and Forest Plan fails to recognize this scientific finding.

On the same subject, Hutto 2006, notes from the scientific literature: "The most valuable wildlife snags in green-tree

forests are relatively large, as evidenced by the disproportionate number of cavities in larger snags (Lehmkuhl et al. 2003), and are relatively deteriorated (Drapeau et al. 2002)."

Spiering and Knight (2005) examined the relationship between cavity-nesting birds and snag density in managed ponderosa pine stands and examined if cavity-nesting bird use of snags as nest sites was related to the following snag characteristics (DBH, snag height, state of decay, percent bark cover, and the presence of broken top), and if evidence of foraging on snags was related to the following snag characteristics: tree species, DBH, and state of decay. Spiering and Knight (2005) state:

"Many species of birds are dependent on snags for nest sites, including 85 species of cavity-nesting birds in North America (Scott et al. 1977). Therefore, information of how many and what types of snags are required by cavity-nesting bird species is critical for wildlife biologists, silviculturists, and forest managers."

"Researchers across many forest types have found that cavity-nesting birds utilize snags with large DBH and tall height for nest trees (Scott, 1978; Cunningham et al., 1980; Mannan et al., 1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992)."

Spiering and Knight (2005) found the following. Larger DBH and greater snag height were positively associated with the presence of a cavity, and advanced

stages of decay and the presence of a broken top were negatively associated with the presence of a cavity. Snags in larger DBH size classes had more evidence of foraging than expected based on abundance.

Percent bark cover had little influence on the presence of a cavity. Therefore, larger and taller snags that are not heavily decayed are the most likely locations for cavity-nesting birds to excavate cavities.

The association of larger DBH and greater height of snags with cavities is consistent with other studies (Scott, 1978; Cunningham et al., 1980; Mannan et al.,

1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992).

Spiering and Knight (2005) state that the "lack of large snags for use as nest sites may be the main reason for the low densities of cavity-nesting birds found in managed stands on the Black Hills National Forest. ...The increased proportion of snags with evidence of foraging as DBH size class increased and the significant goodness-of-fit test indicate that large snags are the most important for foraging."

Tingley et al., 2016 note the diversity of habitats following a fire is related to the diversity of burn severities: "(W)ithin the decade following fire, different burn severities represent unique habitats whose bird communities show differentiation over time... Snags are also critical resources for many bird species after fire. Increasing densi-

ties of many bird species after fire—primarily wood excavators, aerial insectivores, and secondary cavity nesters—can be directly tied to snag densities...”

One issue that arises is the abundance of the large snags and down wood remaining from past logging, firewood gathering, and other management, following the proposed logging, and—the nuance ignored in this EA—through time as recruitment becomes practically nil after a few years in logged areas due to most or all of the large trees being removed and/or downed. Since the EA suggests that

_____

_____

beyond the analysis area (the entire Forest and to the Region) adequate habitat values would remain, the agency is obligated to provide the numbers and conduct a scientifically sound cumulative effects analysis—including the impacts of past logging, firewood gathering, etc. The FS has not done this. Large areas of the BNF were logged in the past, which obviously has affected recruitment of large snags. As we discuss above, the nesting tree needs of the pileated woodpecker is of a larger size than the FS acknowledges or analyzes.

Mealey, 1983 stated: “Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population’s existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible.” That document also provides guidance for pileated woodpecker habitat distribution.

Northern goshawk
Please include a cumulative effects analysis of the proposed amendmentsconsidering past and ongoing impacts in a logical cumulative effects analysis area for goshawks.

Crocker-Bedford (1990) investigated changes in northern goshawk habitat utilization following logging. He noted:

After partial harvesting over extensive locales around nest buffers, reoccupancy decreased by an estimated 90% and nestling production decreased by an estimated 97%. Decreases were probably due to increased

---

competition from open-forest raptors, as well as changes in hunting habitat and prey abundance.

Clough (2000) noted that in the absence of long-term monitoring data, a very conservative approach to allowing logging activities near active goshawk nest stands should be taken to ensure that goshawk distribution is not greatly altered. This indicates that the full 180-acre nest area management scheme recommended by Reynolds et al. (1992) should be used around any active goshawk nest on the Forest. Removal of any large trees in the 180-acre nesting area would contradict the Reynolds et al. (1992) guidelines.

Please explain how the FS would be managing if the amendmentss were adopted in considerations of Reynolds et al. (1992) scientific recommendations. Reynolds, et al. 1992, calls for protecting northern goshawk nest areas

around 3 nests and 3 alternative nests against adverse impacts in each home range.

Reynolds et al. 1992 calls for ratios of (20%/20%/20%) each in the mid-aged forest, mature forest, and old forest Vegetative Structural Stage (VSS) classes for, in this case hypothetical post-fledging family areas (PFAs) and foraging areas.

In addition, Reynolds et al. 1992 calls for agency-created openings of no more than 2 acres in size or less in the PFAs, depending on forest type, and agency-created

opening of no more than 1-4 acres or less in size in the foraging areas, depending on forest type.

Along with Reynolds et al., 1992, another conservation strategy for the goshawk is Graham, et al., 1999. Research suggests that it is essential to viability of goshawks that 20-50% of old growth within their nesting areas be maintained (Suring et al. 1993, Reynolds et al. 1992). USDA Forest Service (2000b) recommends that forest opening greater than 50-60 acres be avoided in the vicinity of goshawks. At least five years of monitoring is necessary to allow for effective estimates of habitat quality (USDA Forest Service, 2000b). Research suggests that a localized distribution of 50% old growth should be maintained to allow for viability of goshawks (Suring et al. 1993).

Moser and Garton (2009) reported that all goshawk nests examined in their study area were found in stands whose average diameter of overstory trees was over 12.2 inches

and all nest stands had > 70% overstory tree canopy. They described their findings as being similar to those described by Hayward and Escano (1989), who reported that nesting habitat "may be described as mature to overmature conifer forest with a closed canopy (75-85% cover)...."

Please recognize goshawk long-term fidelity to nest stands.

Also please consider Beier and Drennan (1997), Crocker-Bedford (1990), Greenwald et al. (2005), Hayward and Escano (1989), La Sorte, et al. (2004), USDA Forest

Service (2000b) and Patla (1997) as best available science for northern goshawk biology.

Please disclose the frequency and geographic extent of goshawk nest searches during the past 10 years in the BNF.

Please utilize goshawk survey methodology consistent with the best available science. For example the recent and comprehensive protocol, "Northern Goshawk Inventory and Monitoring Technical Guide" by Woodbridge and Hargis, 2006. Also, USDA Forest Service 2000b state:

A common thread in the interviews was the lack of a landscape approach in providing goshawk habitat well distributed across the Forest (Squires, Reynolds, Boyce). Reynolds was deeply concerned that both alternatives focus only on 600 acres around known goshawk nests. He was concerned that this direction could be keeping the

goshawk population artificially low. Because goshawks move around within their territories, they are very difficult to find (Reynolds). There might be more goshawks on the Forest than currently known (Squires). One or two years of goshawk surveys is not enough (Reynolds). Some pairs may not lay eggs for five years (Reynolds). To get confidence in identifying nesting goshawk pairs, four to six years of surveys are needed (Reynolds). (Emphasis added.)

The FS's Samson (2006a) reports says that 110 breeding

individuals (i.e. 55 pairs) are necessary for a viable goshawk population in R1. Attachment 1 is a map showing the results from the 2005 R1 region-wide goshawk survey using their Woodbridge and Hargis goshawk monitoring protocol, which is published as a USFS technical report. The 2005 detection map says there were 40 detections in 2005 in Region 1. So the results of this survey essentially show that the population in Region 1 is not viable according to the agency's own science (only 40 instead of 55). And some of the detections may have been individuals using the same nest, so the number of nests (and therefore number of breeding pairs) could be even lower than 40.

Elk and other Big game
Please do a complete quantitative or qualitative analysis of security and thermal cover.

Please demonstrate consistency with all other forest plan direction. Please present an analysis explaining how

changing the old growth definition in the Forest Plan assures that population viability is maintained, or maintains quality hunting opportunities.

The science is clear that motorized access via trail, road, or oversnow adversely impact habitat for the elk. Servheen, et al., 1997 indicate that motorized trails increase elk vulnerability and reduce habitat effectiveness, and provide scientific management recommendations.

Christensen, et al. (1993) is a Region One publication on

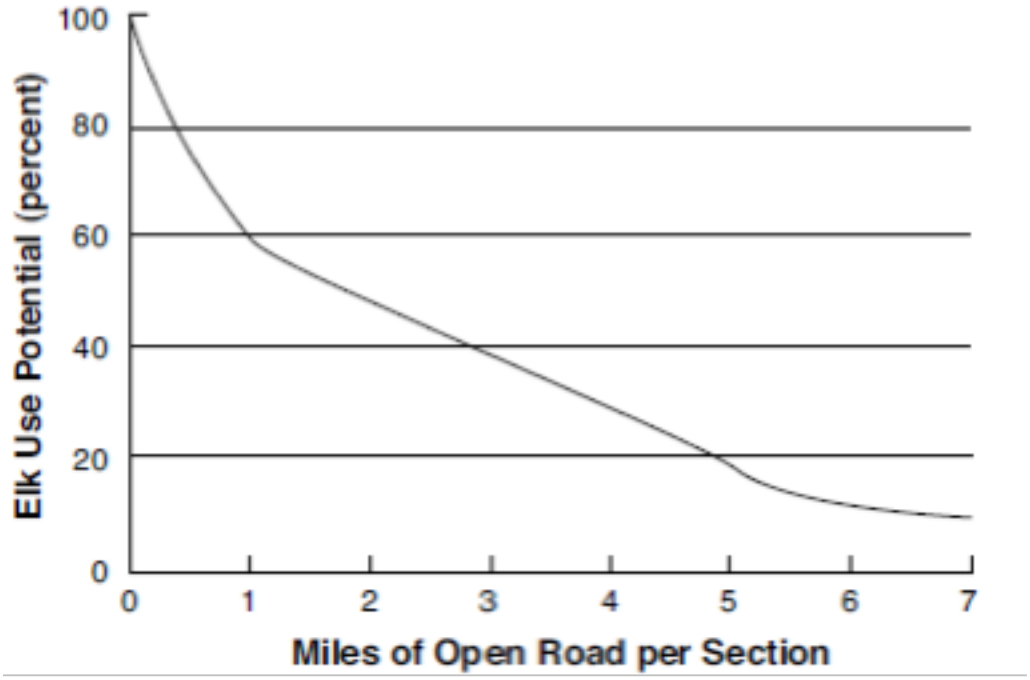
---

elk habitat effectiveness. Meeting a minimum of 70% translates to about 0.75 miles/sq. mi. in key elk habitat, as shown in their graph:

Carnefix and Frissell, 2009 make a very strong scientific rationale for including ecologically-based road density standards:

Roads have well-documented, significant and widespread ecological impacts across multiple scales, often far beyond the area of the road "footprint". Such impacts often create large and extensive departures from the natural conditions to which organisms are adapted, which increase with the extent and/or density of the road network. Road density is a useful metric or indicator of human impact at all scales broader than a single local site because it integrates impacts of human disturbance from activities that are associated with roads and their use (e.g., timber harvest, mining, human

5. Levels of habitat effectiveness:



wildfire ignitions, invasive species introduction and spread, etc.) with direct road impacts. Multiple, convergent lines of empirical evidence summarized herein support two robust conclusions: 1) no truly "safe" threshold road density exists, but rather negative impacts begin to accrue and be expressed with incursion of the very first road segment; and 2) highly significant impacts (e.g., threat of extirpation of sensitive species) are already apparent at road densities on the order of 0.6 km per square km (1 mile per square mile) or less. Therefore, restoration strategies prioritized to reduce road densities in areas of high aquatic resource value from low-to-moderately-low levels to zero-to-low densities (e.g., <1 mile per square mile, lower if attainable) are likely to be most efficient and effective in terms of both economic cost and ecological benefit. By strong inference from these empirical stud-

ies of systems and species sensitive to humans' environmental impact, with limited exceptions, investments that only reduce high road density to moderate road density are unlikely to produce any but small incremental improvements in abundance, and will not result in robust populations of sensitive species.

Black-backed woodpecker
Please consider the best available science for the Sensitive black-backed woodpecker analysis, and includes inadequate cumulative effects analysis.

Please analyze or disclose the quality of habitat based on prefire management activities that scientific research has found affects postfire woodpecker utilization.

The Sensitive species black-backed woodpecker is a primary cavity nester, and also the closest thing to an indicator for species depending upon the process of wildland fire in the ecosystem. Cherry (1997) states:

The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore,

the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The FS manages against severely burned forests. The viability of black-backed woodpeckers is threatened by the FS's fire suppression and other "forest health" policies which specifically attempt to prevent its habitat from developing. "Insect infestations and recent wildfire provide key nesting and foraging habitats" for the black-backed woodpecker and "populations are eruptive in response to

these occurrences" (Wisdom et al. 2000). The timber sale would reduce habitat the black-backed woodpecker biologically relies on. Viability of a species cannot be assured, if habitat suppression is a forestwide policy.

Cherry (1997) notes:
Woodpeckers play critical roles in the forest ecosystem. Woodpeckers are primary cavity nesters that excavate at least one cavity per year, thus making these sites available to secondary cavity nesters (which include many species of both birds and mammals). Black- backed and three-toed woodpeckers can play a large role in potential insect control. The functional roles of these two woodpecker species could easily place them in the 'keystone' species category—a species on which other species depend for their existence.

Wickman (1965) calculated that woodpeckers may eat up to 50 larvae per day that were each about 50 mm in length. The predation on these larvae is significant. It has

been estimated that individual three-toed woodpeckers may consume thousands of beetle larvae per day, and insect outbreaks may attract a many-fold increase in woodpecker densities (Steeger et al. 1996). The ability of woodpeckers in to help control insect outbreaks may have previously been underestimated.

Black-backed woodpeckers preferred foraging in trees of 34 cm (16.5 in) diameters breast height and (63 ft) 19 m height (Bull et al. 1986). Goggans et al. (1987) found

the mean dbh of trees used for foraging was 37.5 cm (15 in) and the mean dbh of trees in the lodgepole pine stands used for foraging was 35 cm (14 in). Steeger et al. (1996) found that both (black-backed and three-toed) woodpecker species fed in trees from 20-50 cm (8-20 in) dbh.

Black-backed woodpeckers excavate their own cavities in trees for nesting. Therefore, they are referred to as primary cavity nesters, and they play a critical role in excavating cavities that are later used by many other species of birds and mammals that do not excavate their own cavity (secondary cavity nesters). Black-backed woodpeckers peel bark away from the entrance hole and excavate a new cavity every year. Other woodpeckers sometimes take over their cavities (Goggans et al. 1987).

Also, FS biologists Goggans et al., 1989 studied black-backed woodpecker use of unburned stands in the Deschutes NF in Oregon. They discovered that the black-backed woodpeckers used unlogged forests more than cut stands. In other words, effects to the black-backed wood-

pecker accrue from logging forest habitat that has not been recently burned.

FS biologists Hillis et al., 2002 note that "In northern Idaho, where burns have been largely absent for the last 60 years, black-backed woodpeckers are found amid bark beetle outbreaks, although not at the densities found in

post-burn conditions in Montana." Those researchers also state, "The greatest concerns for this species, however, are decades of successful fire suppression and salvage logging targeted at recent bark beetle outbreaks." Hillis et al., 2002 also state:

Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests (Steeger and Dulisse in press, Bull et al. 1986, Goggans et al. 1987, Villard 1994, Hoffman 1997, Weinhagen 1998).

Hutto, 1995 states: "Fires are clearly beneficial to numerous bird species, and are apparently necessary for some." (Emphasis added.) Hutto, 1995 whose study keyed on forests burned in 1988, noted:

Contrary to what one might expect to find immediately after a major disturbance event, I detected a large number

of species in forests that had undergone stand- replacement fires. Huff et al. (1985) also noted that the density and diversity of bird species in one- to two- year-old burned forests in the Olympic Mountains, Washington, were as great as adjacent old-growth forests...

...Several bird species seem to be relatively restricted in distribution to early post-fire conditions... I believe it would be difficult to find a forest-bird species more restricted to a single vegetation cover type in the northern Rockies than the Black-backed Woodpecker is to early [first 6 years] post-fire conditions. (Emphases added.)

USDA Forest Service 2011c states:
Hutto (2008), in a study of bird use of habitats burned in the 2003 fires in northwest Montana, found that within burned forests, there was one variable that exerts an influence that outstrips the influence of any other variable on the distribution of birds, and that is fire severity. Some species, including the black-backed woodpecker, were relatively abundant only in the high- severity patches. Hutto's preliminary results also suggested burned forests that were harvested fairly intensively (seed tree cuts, shelterwood cuts) within a decade or two prior to the fires of 2003 were much less suitable as post-fire forests to the black-backed woodpecker and other fire dependent bird species. Even forests that were harvested more selectively within a decade or two prior to fire were less likely to be occupied by black-backed woodpeckers.

Also see the agency's Fire Science Brief, 2009, which states, "Hutto found that Black-backed Woodpeckers

fared best on sites unharvested before fire and poorest in the

heavily harvested sites."

How will the Trail Creek project effect black-backed woodpeckers?

Hutto, 2008 states, "severely burned forest conditions have probably occurred naturally across a broad range of forest types for millennia. These findings highlight the fact that severe fire provides an important ecological backdrop for fire specialists like the Black-backed Woodpecker, and that the presence and importance of severe fire may be much broader than commonly appreciated."

Hutto, 2006 states:
The profound failure of many decision makers to appreciate the ecological value of burned forests stems from their taking too narrow a view of what forests provide. ...Land managers, politicians, and the public- at-large need to gain a better appreciation of the unique nature of burned forests as ecological communities, ... and how important the legacy of standing deadwood is to the natural development of forests (Franklin et al. 2000).

Bond et al., 2012a explain the need for a conservation strategy for the black-backed woodpecker:
In California, the Black-backed Woodpecker's strong association with recently burned forest, a habitat that is ephemeral, spatially restricted, and often greatly modified by post-fire logging, as well as the species' relative rarity,

may make the woodpecker vulnerable to declines in the state. Additionally, Black-backed Woodpeckers in California are affected by the management of unburned forests – both because pre-fire stand conditions affect the suitability of post-fire habitat for the species, and because a substantial proportion of California's Black-backed Woodpeckers nest and forage at a low population density in unburned forests. Conserving the Black-backed Woodpecker in California likely requires appropriate management and stewardship of the habitat where this species reaches its highest density – recently burned forest – as well as appropriate management of 'green' forests that have not burned recently

The EA does not disclose the quantity and quality of habitat that is necessary to sustain the viability of the black-backed woodpecker, or an explanation of the FS's methodology for measuring this habitat.

Holt and Hillis, "Current Status and Habitat Associations of Forest Owls in Western Montana" (1987).

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective

(and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey 1983.)

The FS should firmly establish that the species that exist, or historically are believed to have been present in the BNF are still part of viable populations. Since Forest Plan monitoring efforts have failed in this regard, it must be a priority for project analyses. Identification of viable populations is something that must be done at a specific geographic scale. The analysis must cover a large enough area to include a cumulative effects analysis area that would include truly viable populations. Analysis must identify viable populations of MIS, TES, at-risk, focal, and demand species of which the individuals in the analysis area are members in order to sustain viable populations.

Unfortunately, in the BNF and region-wide the FS has failed to meet Forest Plan old-growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA (Juel, 2003).

Please disclose how stands to be treated compare under the current Forest Plan old-growth criteria compared to the proposed amend mended old growth definition to the Forest Plan. In order to disclose such information, please provide all the details, in plain language, of these areas'

forest characteristics (the various tree components' species, age and diameter of the various tree components, canopy closure, snag density by size class, amounts of down logs, understory composition, etc.).

Please examine how this project could affect grizzly bears, lynx and other species listed under the Endangered Species Act. Please formally consult with the FWS on the impact of the proposed amendments on grizzly bears and all listed and candidate species under the ESA. Please examine how this proposed amendments will affect all MIS and sensitive species.

Our goals for the BNF include fully functioning stream ecosystems that include healthy, resilient populations of

native trout. The highest priority management actions in the BNF are those that remove impediments to natural recovery. We request the FS design a restoration/access management plan for BNF streams that will achieve recovery goals. The task of management should be the reversal of artificial legacies to allow restoration of natural, self-sustaining ecosystem processes. If natural disturbance patterns are the best way to maintain or restore desired ecosystem values, then nature should be able to accomplish this task very well without human intervention (Frissell and Bayles, 1996).

For the proposal to be consistent with the Forest Plan, enough habitat for viable populations of old-growth dependent wildlife species is needed over the landscape. How will the proposed amendments to the definition of

old growth effect pine martins and pileated woodpecker, the MIS for old growth under the Forest Plan?

Please provide the latest monitoring results for pine martins and pileated woodpecker.

Please include the include the following scientific papers in your analysis.

https://www.fs.fed.us/rm/pubs_exp_forests/coram/rmrs_1977_mcclelland_b001.pdf

https://www.fs.fed.us/rm/pubs_exp_forests/coram/rmrs_1980_mcclelland_b001.pdf

Habitat suitability index model for northern Rocky Mountain pileated woodpeckers . School of Forestry , University of Montana , Missoula . 31 pp . Aney , W. C. ,

_____

_____

_____

_____

and B. R. McClelland . 1990. Pileated woodpecker habitat relationships .

Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero, et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the BDNF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992). Also, temporal considerations of the impacts on wildlife popula-

tion viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the BDNF. It is also of paramount importance to monitor population during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

The U.S. District Court in Montana ruled in Native Ecosystems Council vs. Kimbell on the Keystone Quartz project that the Forest Service presented no hard data to support or demonstrate the biological impact on old-growth species viability across the forest of further reducing Douglas-fir old-growth habitat below minimum forest plan standards, which themselves may be inadequate in light of more recent scientific information. Species in the Northern Region, including the BNF, thought to prefer old-growth

---

habitat for breeding or feeding include northern goshawk, flammulated owl, pileated woodpecker, black-backed woodpecker (after wildfire or beetle epidemic), fisher, marten, Canada lynx, and wolverine. How will the proposed amendmentss to the Forest Plan effect these species?

For the BDNF, sensitive old-growth dependent species include the Pine Martine and pileated woodpeckers. According to official FS policy, the BDF "must develop conservation strategies for those sensitive species whose con-

tinued existence may be negatively affected by the forest plan or a proposed amendments." FSM 2670.45. These strategies would address the forest-wide and range- wide conditions for the affected species, allowing site- specific viability analysis to be tiered to the forest-wide viability analysis, and would establish quantifiable objectives for the affected species. These strategies must be adopted prior to implementation of amendments that would adversely impact sensitive species habitat. FSM 2622.01, 2670.45.

Please demonstrate that this proposed amendments will leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such

as flammulated owls and goshawks. Loggers are required to follow OSHA safety standards. Will these standards require snags to be cut down? After snags are cut down for safety for OSHA requirements will there still be enough snags left for old growth sensitive species?

Specifically how will the proposed amendmentss effect Flammulated owls, cavity-nesters usually associated with mature stands of ponderosa pine and Douglas-fir? Among other habitat characteristics, flammulated owls benefit from an abundance of large snags and a relatively dense under- story. The flammulated owl is a sensitive species in Region One, and is largely dependent on old ponderosa pine forests. According to a 2002 Region-wide assessment, not referenced in the 2003 FEIS for the Project, such forests only occur at 12-16% of their former, pre-fire suppression/ pre-logging (that is, "historic") levels, and thus

species viability has been determined to be at risk. The Northern Region also recognizes that its strategy for restoring habitat for the flammulated owl and found in the Island South project that "in no way guarantees that flammulated owls will be restored to viable levels."

Snag densities recommended by experts to support cavity-nesting birds range from 2.1 to 11 snags per acre of greater

than 9" dbh. Please note that the fact that more recent science has called into question the lower snag densities cited in the earlier research, and the more recent science implies that about 4 snags per acre may be the minimum required to insure viability.

What surveys has the BNF specifically designed to detect flammulated owls? The FS has not developed a conservation strategy for the flammulated owl in the BNF, or in the Northern Rockies. Absent an appropriate landscape management strategy for insuring their viability, based upon the best available science, it is arbitrary and capricious to dismiss potential impacts on the ground where the FS has failed to conduct the kind of comprehensive surveys that would reveal their presence. This convenient excuse for not protecting for a species that is becoming exceedingly rare, a strategy of managing for extinction (since protection premised on detection affords greatest protection to the species that least need it) has been condemned by the FS's own leading expert in the northern region, Mike Hillis:

With the exception of the Spotted Owl..., the U.S. Forest Service has not given much emphasis to owl management. This is contrary to the National Forest Management Act of 1976 (NFMA) which mandates that all wildlife species be managed for viable populations. However, with over 500 vertebrate

species this would be difficult for any organization. Recognizing the absence of detailed information on owl habitat, the apparent association of owls with snags, mature, and old-growth timber (both rapidly declining), it seems inconsistent that the U.S. Forest Service has placed little emphasis on owl management. One might conclude that the agency's painful experiences with the Spotted Owl in Oregon and Washington have evolved into a 'hear no evil, see no evil' approach for other forest owls as well.

The NPCNF's Lolo Insect & Disease DEIS states: "The nest tree is the most important variable to estimate breeding habitat use by the pileated woodpecker (Kirk and Naylor 1996, Giese and Cuthbert 2003) ...The mean DBH of nest trees was 33 inches. ...Nest trees averaged 28 inches DBH." (Emphases added.)

Bull et al., 2007 compare the effects of natural disturbance with large-scale logging on pileated woodpeckers. Also see Bull et al., 1992, Bull and Holthausen, 1993, and Bull et al., 1997 for biology of pileated woodpeckers and the habitats they share with cavity nesting wildlife.

Lorenz et al., 2015 state:
Our findings suggest that higher densities of snags and

other nest substrates should be provided for PCEs (primary cavity excavators) than generally recommended, because past research studies likely overestimated the abundance of suitable nest sites and

underestimated the number of snags required to sustain PCE populations. Accordingly, the felling or removal of snags for any purpose, including commercial salvage logging and home firewood gathering, should not be permitted where conservation and management of PCEs or SCUs (secondary cavity users) is a concern (Scott 1978, Hutto 2006).

The implication is clear: managers know little about how many snags per acre are needed to sustain populations of cavity nesting species. Only the birds themselves have the capability to decide if a tree is suitable for excavating. The EA and Forest Plan fails to recognize this scientific finding.

On the same subject, Hutto 2006, notes from the scientific literature: "The most valuable wildlife snags in green-tree forests are relatively large, as evidenced by the disproportionate number of cavities in larger snags (Lehmkuhl et al. 2003), and are relatively deteriorated (Drapeau et al. 2002)."

Spiering and Knight (2005) examined the relationship between cavity-nesting birds and snag density in managed ponderosa pine stands and examined if cavity-nesting bird use of snags as nest sites was related to the following snag characteristics (DBH, snag height, state of decay, percent

bark cover, and the presence of broken top), and if evidence of foraging on snags was related to the following snag characteristics: tree species, DBH, and state of decay. Spiering and Knight (2005) state:

"Many species of birds are dependent on snags for nest sites, including 85 species of cavity-nesting birds in North America (Scott et al. 1977). Therefore, information of how many and what types of snags are required by cavity-nesting bird species is critical for wildlife biologists, silviculturists, and forest managers."

"Researchers across many forest types have found that cavity-nesting birds utilize snags with large DBH and tall height for nest trees (Scott, 1978; Cunningham et al., 1980; Mannan et al., 1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992)."

Spiering and Knight (2005) found the following. Larger DBH and greater snag height were positively associated with the presence of a cavity, and advanced stages of decay and the presence of a broken top were negatively associated with the presence of a cavity. Snags in larger DBH size classes had more evidence of foraging than expected based on abundance.

Percent bark cover had little influence on the presence of a cavity. Therefore, larger and taller snags that are not heavily decayed are the most likely locations for cavity-nesting birds to excavate cavities.

The association of larger DBH and greater height of snags with cavities is consistent with other studies (Scott, 1978; Cunningham et al., 1980; Mannan et al.,

1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992).

Spiering and Knight (2005) state that the "lack of large snags for use as nest sites may be the main reason for the low densities of cavity-nesting birds found in managed stands on the Black Hills National Forest. ...The increased proportion of snags with evidence of foraging as DBH size class increased and the significant goodness-of-fit test indicate that large snags are the most important for foraging."

Tingley et al., 2016 note the diversity of habitats following a fire is related to the diversity of burn severities: "(W)ithin the decade following fire, different burn severities represent unique habitats whose bird communities show differentiation over time... Snags are also critical resources for many bird species after fire. Increasing densities of many bird species after fire—primarily wood excavators, aerial insectivores, and secondary cavity nesters—can be directly tied to snag densities..."

One issue that arises is the abundance of the large snags and down wood remaining from past logging, firewood gathering, and other management, following the proposed logging, and—the nuance ignored in this EA—through time as recruitment becomes practically nil after a few

years in logged areas due to most or all of the large trees being removed and/or downed. Since the EA suggests that

---

---

beyond the analysis area (the entire Forest and to the Region) adequate habitat values would remain, the agency is obligated to provide the numbers and conduct a scientifically sound cumulative effects analysis—including the impacts of past logging, firewood gathering, etc. The FS has not done this. Large areas of the BNF were logged in the past, which obviously has affected recruitment of large snags. As we discuss above, the nesting tree needs of the pileated woodpecker is of a larger size than the FS acknowledges or analyzes.

Mealey, 1983 stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." That document also provides guidance for pileated woodpecker habitat distribution.

Northern goshawk
Please include a cumulative effects analysis of the proposed amendmentsconsidering past and ongoing impacts in a logical cumulative effects analysis area for goshawks.

Crocker-Bedford (1990) investigated changes in northern goshawk habitat utilization following logging. He noted:

After partial harvesting over extensive locales around nest buffers, reoccupancy decreased by an estimated 90% and nestling production decreased by an estimated 97%. Decreases were probably due to increased

---

competition from open-forest raptors, as well as changes in hunting habitat and prey abundance.

Clough (2000) noted that in the absence of long-term monitoring data, a very conservative approach to allowing logging activities near active goshawk nest stands should be taken to ensure that goshawk distribution is not greatly altered. This indicates that the full 180-acre nest area management scheme recommended by Reynolds et al. (1992) should be used around any active goshawk nest on the Forest. Removal of any large trees in the 180-acre nesting area would contradict the Reynolds et al. (1992) guidelines.

Please explain how the FS would be managing if the amendmentss were adopted in considerations of Reynolds et al. (1992) scientific recommendations. Reynolds, et al. 1992, calls for protecting northern goshawk nest areas around 3 nests and 3 alternative nests against adverse impacts in each home range.

Reynolds et al. 1992 calls for ratios of (20%/20%/20%) each in the mid-aged forest, mature forest, and old forest Vegetative Structural Stage (VSS) classes for, in this case hypothetical post-fledging family areas (PFAs) and foraging areas.

In addition, Reynolds et al. 1992 calls for agency-created openings of no more than 2 acres in size or less in the PFAs, depending on forest type, and agency-created

opening of no more than 1-4 acres or less in size in the foraging areas, depending on forest type.

Along with Reynolds et al., 1992, another conservation strategy for the goshawk is Graham, et al., 1999. Research suggests that it is essential to viability of goshawks that 20-50% of old growth within their nesting areas be maintained (Suring et al. 1993, Reynolds et al. 1992). USDA Forest Service (2000b) recommends that forest opening greater than 50-60 acres be avoided in the vicinity of goshawks. At least five years of monitoring is necessary to allow for effective estimates of habitat quality (USDA Forest Service, 2000b). Research suggests that a localized distribution of 50% old growth should be maintained to allow for viability of goshawks (Suring et al. 1993).

Moser and Garton (2009) reported that all goshawk nests examined in their study area were found in stands whose average diameter of overstory trees was over 12.2 inches and all nest stands had > 70% overstory tree canopy. They described their findings as being similar to those described by Hayward and Escano (1989), who reported that nesting habitat "may be described as mature to overmature conifer forest with a closed canopy (75-85% cover)...."

Please recognize goshawk long-term fidelity to nest stands.

Also please consider Beier and Drennan (1997), Crocker-Bedford (1990), Greenwald et al. (2005), Hayward and Escano (1989), La Sorte, et al. (2004), USDA Forest

Service (2000b) and Patla (1997) as best available science for northern goshawk biology.

Please disclose the frequency and geographic extent of goshawk nest searches during the past 10 years in the BNF.

Please utilize goshawk survey methodology consistent with the best available science. For example the recent and comprehensive protocol, "Northern Goshawk Inventory and Monitoring Technical Guide" by Woodbridge and Hargis, 2006. Also, USDA Forest Service 2000b state:

A common thread in the interviews was the lack of a landscape approach in providing goshawk habitat well distributed across the Forest (Squires, Reynolds, Boyce). Reynolds was deeply concerned that both alternatives focus only on 600 acres around known goshawk nests. He was concerned that this direction could be keeping the goshawk population artificially low. Because goshawks move around within their territories, they are very difficult to find (Reynolds). There might be more goshawks on the Forest than currently known (Squires). One or two years of goshawk surveys is not enough (Reynolds). Some pairs may not lay eggs for five years (Reynolds). To get confidence in identifying nesting goshawk pairs, four to

six years of surveys are needed (Reynolds). (Emphasis added.)

The FS's Samson (2006a) reports says that 110 breeding

individuals (i.e. 55 pairs) are necessary for a viable goshawk population in R1. Attachment 1 is a map showing the results from the 2005 R1 region-wide goshawk survey using their Woodbridge and Hargis goshawk monitoring protocol, which is published as a USFS technical report. The 2005 detection map says there were 40 detections in 2005 in Region 1. So the results of this survey essentially show that the population in Region 1 is not viable according to the agency's own science (only 40 instead of 55). And some of the detections may have been individuals using the same nest, so the number of nests (and therefore number of breeding pairs) could be even lower than 40.

Elk and other Big game
Please do a complete quantitative or qualitative analysis of security and thermal cover.

Please demonstrate consistency with all other forest plan direction. Please present an analysis explaining how changing the old growth definition in the Forest Plan assures that population viability is maintained, or maintains quality hunting opportunities.

The science is clear that motorized access via trail, road, or oversnow adversely impact habitat for the elk. Servheen, et al., 1997 indicate that motorized trails in-

crease elk vulnerability and reduce habitat effectiveness, and provide scientific management recommendations.

Christensen, et al. (1993) is a Region One publication on

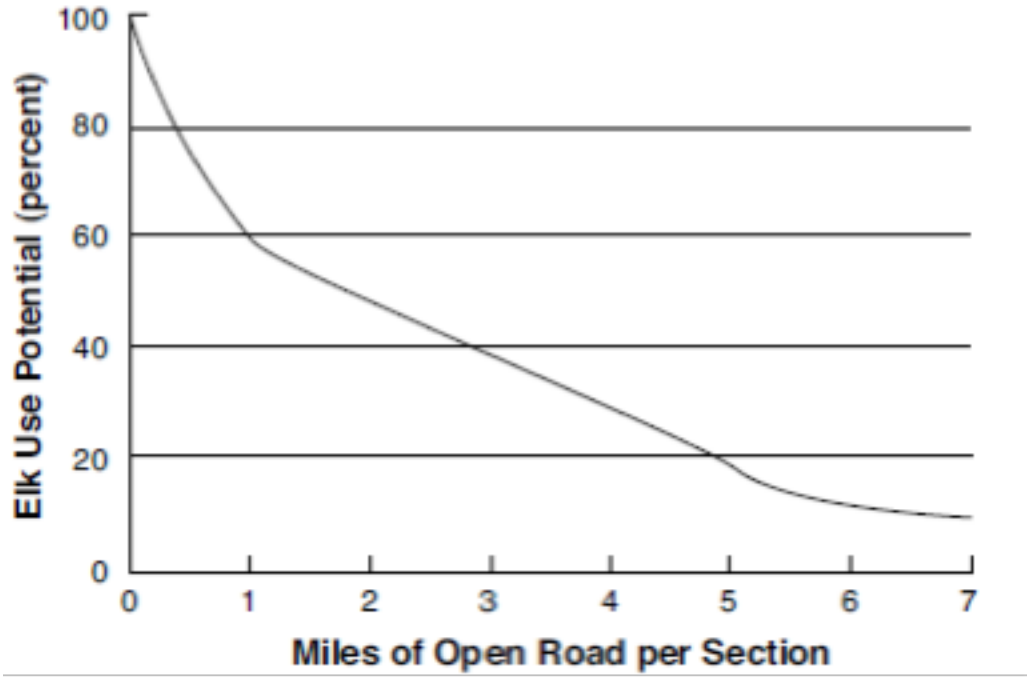
---

elk habitat effectiveness. Meeting a minimum of 70% translates to about 0.75 miles/sq. mi. in key elk habitat, as shown in their graph:

Carnefix and Frissell, 2009 make a very strong scientific rationale for including ecologically-based road density standards:

Roads have well-documented, significant and widespread ecological impacts across multiple scales, often far beyond the area of the road "footprint". Such impacts often create large and extensive departures from the natural conditions to which organisms are adapted, which increase with the extent and/or density of the road network. Road density is a useful metric or indicator of human impact at all scales broader than a single local site because it integrates impacts of human disturbance from activities that are associated with roads and their use (e.g., timber harvest, mining, human

5. Levels of habitat effectiveness:



wildfire ignitions, invasive species introduction and spread, etc.) with direct road impacts. Multiple, convergent lines of empirical evidence summarized herein support two robust conclusions: 1) no truly "safe" threshold road density exists, but rather negative impacts begin to accrue and be expressed with incursion of the very first road segment; and 2) highly significant impacts (e.g., threat of extirpation of sensitive species) are already apparent at road densities on the order of 0.6 km per square km (1 mile per square mile) or less. Therefore, restoration strategies prioritized to reduce road densities in areas of high aquatic resource value from low-to-moderately-low levels to zero-to-low densities (e.g., <1 mile per square mile, lower if attainable) are likely to be most efficient and effective in terms of both economic cost and ecological benefit. By strong inference from these empirical stud-

ies of systems and species sensitive to humans' environmental impact, with limited exceptions, investments that only reduce high road density to moderate road density are unlikely to produce any but small incremental improvements in abundance, and will not result in robust populations of sensitive species.

Black-backed woodpecker
Please consider the best available science for the Sensitive black-backed woodpecker analysis, and includes inadequate cumulative effects analysis.

Please analyze or disclose the quality of habitat based on prefire management activities that scientific research has found affects postfire woodpecker utilization.

The Sensitive species black-backed woodpecker is a primary cavity nester, and also the closest thing to an indicator for species depending upon the process of wildland fire in the ecosystem. Cherry (1997) states:

The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the 'healthy' forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore,

the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline.

The FS manages against severely burned forests. The viability of black-backed woodpeckers is threatened by the FS's fire suppression and other "forest health" policies which specifically attempt to prevent its habitat from developing. "Insect infestations and recent wildfire provide key nesting and foraging habitats" for the black-backed woodpecker and "populations are eruptive in response to

these occurrences" (Wisdom et al. 2000). The timber sale would reduce habitat the black-backed woodpecker biologically relies on. Viability of a species cannot be assured, if habitat suppression is a forestwide policy.

Cherry (1997) notes:
Woodpeckers play critical roles in the forest ecosystem. Woodpeckers are primary cavity nesters that excavate at least one cavity per year, thus making these sites available to secondary cavity nesters (which include many species of both birds and mammals). Black- backed and three-toed woodpeckers can play a large role in potential insect control. The functional roles of these two woodpecker species could easily place them in the 'keystone' species category—a species on which other species depend for their existence.

Wickman (1965) calculated that woodpeckers may eat up to 50 larvae per day that were each about 50 mm in length. The predation on these larvae is significant. It has

been estimated that individual three-toed woodpeckers may consume thousands of beetle larvae per day, and insect outbreaks may attract a many-fold increase in woodpecker densities (Steeger et al. 1996). The ability of woodpeckers in to help control insect outbreaks may have previously been underestimated.

Black-backed woodpeckers preferred foraging in trees of 34 cm (16.5 in) diameters breast height and (63 ft) 19 m height (Bull et al. 1986). Goggans et al. (1987) found

the mean dbh of trees used for foraging was 37.5 cm (15 in) and the mean dbh of trees in the lodgepole pine stands used for foraging was 35 cm (14 in). Steeger et al. (1996) found that both (black-backed and three-toed) woodpecker species fed in trees from 20-50 cm (8-20 in) dbh.

Black-backed woodpeckers excavate their own cavities in trees for nesting. Therefore, they are referred to as primary cavity nesters, and they play a critical role in excavating cavities that are later used by many other species of birds and mammals that do not excavate their own cavity (secondary cavity nesters). Black-backed woodpeckers peel bark away from the entrance hole and excavate a new cavity every year. Other woodpeckers sometimes take over their cavities (Goggans et al. 1987).

Also, FS biologists Goggans et al., 1989 studied black-backed woodpecker use of unburned stands in the Deschutes NF in Oregon. They discovered that the black-backed woodpeckers used unlogged forests more than cut stands. In other words, effects to the black-backed wood-

pecker accrue from logging forest habitat that has not been recently burned.

FS biologists Hillis et al., 2002 note that "In northern Idaho, where burns have been largely absent for the last 60 years, black-backed woodpeckers are found amid bark beetle outbreaks, although not at the densities found in

post-burn conditions in Montana." Those researchers also state, "The greatest concerns for this species, however, are decades of successful fire suppression and salvage logging targeted at recent bark beetle outbreaks." Hillis et al., 2002 also state:

Black-backed woodpeckers occupy forested habitats that contain high densities of recently dead or dying trees that have been colonized by bark beetles and woodborer beetles (Buprestidae, Cerambycidae, and Scolytidae). These beetles and their larvae are most abundant within burned forests. In unburned forests, bark beetle and woodborer infested trees are found primarily in areas that have undergone natural disturbances, such as wind-throw, and within structurally diverse old-growth forests (Steeger and Dulisse in press, Bull et al. 1986, Goggans et al. 1987, Villard 1994, Hoffman 1997, Weinhagen 1998).

Hutto, 1995 states: "Fires are clearly beneficial to numerous bird species, and are apparently necessary for some." (Emphasis added.) Hutto, 1995 whose study keyed on forests burned in 1988, noted:

Contrary to what one might expect to find immediately after a major disturbance event, I detected a large number

of species in forests that had undergone stand- replacement fires. Huff et al. (1985) also noted that the density and diversity of bird species in one- to two- year-old burned forests in the Olympic Mountains, Washington, were as great as adjacent old-growth forests...

...Several bird species seem to be relatively restricted in distribution to early post-fire conditions... I believe it would be difficult to find a forest-bird species more restricted to a single vegetation cover type in the northern Rockies than the Black-backed Woodpecker is to early [first 6 years] post-fire conditions. (Emphases added.)

USDA Forest Service 2011c states:
Hutto (2008), in a study of bird use of habitats burned in the 2003 fires in northwest Montana, found that within burned forests, there was one variable that exerts an influence that outstrips the influence of any other variable on the distribution of birds, and that is fire severity. Some species, including the black-backed woodpecker, were relatively abundant only in the high- severity patches. Hutto's preliminary results also suggested burned forests that were harvested fairly intensively (seed tree cuts, shelterwood cuts) within a decade or two prior to the fires of 2003 were much less suitable as post-fire forests to the black-backed woodpecker and other fire dependent bird species. Even forests that were harvested more selectively within a decade or two prior to fire were less likely to be occupied by black-backed woodpeckers.

Also see the agency's Fire Science Brief, 2009, which states, "Hutto found that Black-backed Woodpeckers

fared best on sites unharvested before fire and poorest in the

heavily harvested sites."

How will the Trail Creek project effect black-backed woodpeckers?

Hutto, 2008 states, "severely burned forest conditions have probably occurred naturally across a broad range of forest types for millennia. These findings highlight the fact that severe fire provides an important ecological backdrop for fire specialists like the Black-backed Woodpecker, and that the presence and importance of severe fire may be much broader than commonly appreciated."

Hutto, 2006 states:
The profound failure of many decision makers to appreciate the ecological value of burned forests stems from their taking too narrow a view of what forests provide. ...Land managers, politicians, and the public- at-large need to gain a better appreciation of the unique nature of burned forests as ecological communities, ... and how important the legacy of standing deadwood is to the natural development of forests (Franklin et al. 2000).

Bond et al., 2012a explain the need for a conservation strategy for the black-backed woodpecker:
In California, the Black-backed Woodpecker's strong association with recently burned forest, a habitat that is ephemeral, spatially restricted, and often greatly modified by post-fire logging, as well as the species' relative rarity,

may make the woodpecker vulnerable to declines in the state. Additionally, Black-backed Woodpeckers in California are affected by the management of unburned forests – both because pre-fire stand conditions affect the suitability of post-fire habitat for the species, and because a substantial proportion of California's Black-backed Woodpeckers nest and forage at a low population density in unburned forests. Conserving the Black-backed Woodpecker in California likely requires appropriate management and stewardship of the habitat where this species reaches its highest density – recently burned forest – as well as appropriate management of 'green' forests that have not burned recently

The EA does not disclose the quantity and quality of habitat that is necessary to sustain the viability of the black-backed woodpecker, or an explanation of the FS's methodology for measuring this habitat.

Holt and Hillis, "Current Status and Habitat Associations of Forest Owls in Western Montana" (1987).

State-of-the-art conservation biology and the principles that underlie the agency's policy of "ecosystem management" dictate an increasing focus on the landscape-scale concept and design of large biological reserves accompanied by buffer zones and habitat connectors as the most effective

(and perhaps only) way to preserve wildlife diversity and viability (Noss, 1993).

The FS has stated: "Well distributed habitat is the amount and location of required habitat which assure that individuals from demes, distributed throughout the population's existing range, can interact. Habitat should be located so that genetic exchange among all demes is possible." (Mealey 1983.)

The FS should firmly establish that the species that exist, or historically are believed to have been present in the BNF are still part of viable populations. Since Forest Plan monitoring efforts have failed in this regard, it must be a priority for project analyses. Identification of viable populations is something that must be done at a specific geographic scale. The analysis must cover a large enough area to include a cumulative effects analysis area that would include truly viable populations. Analysis must identify viable populations of MIS, TES, at-risk, focal, and demand species of which the individuals in the analysis area are members in order to sustain viable populations.

Unfortunately, in the BNF and region-wide the FS has failed to meet Forest Plan old-growth standards, does not keep accurate old-growth inventories, and has not monitored population trends in response to management activities as required by Forest Plans and NFMA (Juel, 2003).

Please disclose how stands to be treated compare under the current Forest Plan old-growth criteria compared to the proposed amend mended old growth definition to the Forest Plan. In order to disclose such information, please provide all the details, in plain language, of these areas'

forest characteristics (the various tree components' species, age and diameter of the various tree components, canopy closure, snag density by size class, amounts of down logs, understory composition, etc.).

Please examine how this project could affect grizzly bears, lynx and other species listed under the Endangered Species Act. Please formally consult with the FWS on the impact of the proposed amendments on grizzly bears and all listed and candidate species under the ESA. Please examine how this proposed amendments will affect all MIS and sensitive species.

Our goals for the BNF include fully functioning stream ecosystems that include healthy, resilient populations of

native trout. The highest priority management actions in the BNF are those that remove impediments to natural recovery. We request the FS design a restoration/access management plan for BNF streams that will achieve recovery goals. The task of management should be the reversal of artificial legacies to allow restoration of natural, self-sustaining ecosystem processes. If natural disturbance patterns are the best way to maintain or restore desired ecosystem values, then nature should be able to accomplish this task very well without human intervention (Frissell and Bayles, 1996).

The Forest Service responded:

Population persistence, as defined and required by the 2012 Planning Rule, is required to be conducted at the scale of a plan area and during Forest Plan revision. This ties directly into cumulative effects analyses for ongoing projects or projects reasonably likely to occur.

Again, population persistence, as defined and required by the 2012 Planning Rule, is required to be conducted at the scale of a plan area and during Forest Plan revision.

Effects to Management indicator species and TES are disclosed in the EA. The amendment will not adversely impact sensitive species habitat.

Snags felled for safety reasons would be left on site. This is a standard contract provision. Large live trees would be left as replacement snags.

See Table 3 in the EA. The recommended snag levels well exceed four per acre.
The finding of no significant impact has determined that an EIS is not needed for this amendment. The EA will not have an adverse effect on the human environment.

No logging or road builidng is proposed in the amendment. Standard contract provisions also address prevention and mitigation of weed spread.
This amendment was analyzed under an environmental assessment and a finding of no signficiant impact was made. A change to weed standards are outside the scope of the amendment at this time.

The components in this amendment do not direct an increase in logging. Canada lynx were excluded from analysis, as explained in the EA, because they have not been documented to occur on the Bitterroot National Forest, the Northern Rockies Lynx Management Direction applies to all vegetation management projects on the forest, and previous consultation with the USFWS has been compelted.

The Bitterroot N.F. is using the minimum criteria for Green et. al. and is not the best available science. This is letting the Forest Service log old growth forests in violation of the Healthy Forest Act and the President's Executive Order to map and protect old growth forests.

Thus, the old growth analyses across the entire Forest – for every ongoing project, monitoring effort, and planning and analysis process – are fundamentally flawed because the Forest Service is using the wrong definition. The Forest Service's failure to use the definition of old growth that Green et al. called for with Forest Plan old growth standards for retention and viability, violate NFMA NEPA and the APA.

NFMA allows the Forest Service to amend Forest Plans. 16 U.S.C.§1604(f)(4). The Ninth Circuit holds:
If the Forest Service thinks any provision of the 1986 [Helena National Forest] Plan is no longer relevant, the agency should propose amendments to the [Helena National Forest] Plan altering its standards, in a process

complying with NEPA and NFMA, rather than discount its importance in environmental compliance documents. Native Ecosystems Council, 418 F.3d at 961.

Thus, any Forest Plan amendment must comply with both NEPA and NFMA. The Ninth Circuit's ruling on the Helena National Forest violating the Forest Plan equally applies to the BNF.

The 1982 NFMA regulations require: habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area. 36 C.F.R. §219.19 (1982).
The regulations further require that "management planning for the fish and wildlife resource shall meet the requirements set forth in paragraphs (a)(1) through (a)(7) of this section." 36 C.F.R. §219.19(a)(1982).

Section (a)(1) requires: "On the basis of available scientific information, the in-terdisciplinary team shall estimate the effects of changes in vegetation type, timber age classes, community composition, rotation age, and year-long suitability of habitat related to mobility of management indicator species. 36 C.F.R. §219.19(a)(1)(1982).

Section (a)(2) requires: Planning alternatives shall be stated and evaluated in terms of both amount and quality of habitat and of animal population trends of the management indicator species." 36 C.F.R. §219.19(a)(2)(1982). Section (a)

(3) requires: “Biologists from State fish and wildlife agencies and other Federal agencies shall be consulted in order to coordinate planning for fish and wildlife . . . .
36 C.F.R. §219.19(a)(3)(1982).

Section (a)(4) requires: “Access and dispersal problems of hunting, fishing, and other visitor uses shall be considered.”
36 C.F.R. §219.19(a)(4)(1982).

Thus, any Forest Plan amendment under the 1982 regulations must ensure that habitat for a management indicator species is “well-distributed” as established by “available scientific information,” “amount and quality of habitat,” consultation with “State fish and wildlife agencies,” and “[a]ccess and dispersal problems of hunting . . . .” 36 C.F.R. §219.19. In other words, changing the old growth standard to come into compliance with past illegal practices is not sufficient in and of itself; the standard must adequately conserve secure habitat across the entire BNF.

HABITAT TYPE, NOT "***...Vegetation condition class (VCC; formally known as fire regime condition class)...***" is the foundation and best available science to determine characteristics of ecosystem composition and structure. (Pfister, et al. (1977). All this "vegetative" mumbo-jumbo is used to avoid Pfister and proper, foundational identification of the habitat type.

Dr. John Craighead believed the Pfister vegetation classification was the basis for the study of ecosystems. It takes

people on the ground with good plots that aren't manipulated or added to. The Craighead team had hundreds of plots throughout central Idaho they used to ground truth the satellite images. If you want good data there are no shortcuts. The Forest Service should no evidence that they used plots on the ground to ground truth the data.

A Forest Plan amendment must comply with NEPA procedures. 36 C.F.R. §219.10(f) (1982). A Record of Decision is issued after an EIS is completed. 40 C.F.R. §1505.2 (2019). In the Record of Decision, an agency must "[i]dentify all alternatives considered by the agency in reaching its decision . . . ." 40 C.F.R. §1505.2(a)(2)(2019). In an EIS, agencies shall . . . [r]igorously explore and objectively evaluate all reasonable alternatives. . . ." 40 C.F.R. §1502.14(a)(2019); see also 40 C.F.R. §1502.1 (2019) (an EIS "shall inform decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment.)

The analysis of alternatives "is the heart of the environmental impact statement."40 C.F.R. §1502.14(a)(2019). "The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." Alaska Wilderness Recreation & Tourism Ass'n v. Morrison, 67 F. 3d 723, 729 (9th Cir.1995).

Quote from Pfister et al. (1977):
RESEARCH SUMMARY

A land-classification system based upon potential natural vegetation is presented for the forests of Montana. It is based on an intensive 4-year study and reconnaissance sampling of about 1,500 stands. A hierarchical classification of forest sites was developed using the habitat type concept. A total of 9 climax series, 64 habitat types, and 37 additional phases of habitat types are defined. A diagnostic key is provided for field identification of the types based on indicator species used in development of the classification. In addition to site classification, descriptions of mature forest communities are provided with tables to portray the ecological distribution of all species. Potential productivity for timber, climatic characteristics, and surface soil characteristics are also described for each type. Preliminary implications for natural resource management are provided, based on field observations and current information.

FOREST HABITAT TYPES OF MONTANA, Robert D. Pfister, Bernard L. Kovalchik,
Stephen F. Amo, and Richard C. Presby
INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION
Forest Service-U. S. Department of Agriculture
Ogden, Utah 84401 (hereafter, Pfister, et al. (1977), or Pfister)

Pfister et al. (1977) established a new, and vastly improved, forest classification system which further developed the application of habitat type classification to forest ecosystem classification. A better classification system for forest communities and the characteristics of the specific site locations upon which forest vegetation develop and depend.

The habitat type approach to classification of forest sites was developed more than 20 years ago by Daubenmire (1952) for forests of northern Idaho and eastern Washington. His original classification, and a subsequent revision and J. Daubenmire 1961, have proven useful in forest management and research

(Laysex 1974; Pfister 1976). Id. p.1
In 2022, Pfister et al. is considered the "best available science" in this field (old growth and old-growth habitat) of study. It is often, to this day, spoken fondly of as "The Bible" for habitat-type classification, a detailed expression of the overall environment, ie. an ecological classification. There is, quite simply, no better system in existence being used for interpreting the ecological potential of the forested landscapes of Montana and the Northern Rockies. Federal land managers attempting to make intelligent prescriptions for managing/manipulating forest vegetation should, and must use Pfister's habitat type classifications as the foundation of forest ecosystem analysis.

Pfister is foundational; it is the ground upon which forest ecology and ecosystem science rests. There is no substitute, and any and all attempts to truncate, or compartmentalize elements within Phister's holistic, habitat-type classification system, represents a most objectionable form of "scientism" that reeks of a hidden agenda that
has little to do with interpreting the forest's ecological potential.

ESA - As a foundational ecosystem analysis and interpretation tool, Pfister et al. is linked directly to specific language, unambiguously articulated by Congress, to describe the Purposes of ESA (Endangered Species Act).

(b) PURPOSES
The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and the threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section. Page one, 16 USC, Chapter 35, §1531(b)

We urge the Forest Service to simply comply with the clear intent of Congress, and its own (government funded) research to properly identify the habitat type in the project area using Pfister, et al. and arrive at an intelligent decision based on the best available science, and the intent and purposes of the federal laws which govern these types of

amendments..
….end of project/EA analysis which references Pfister, and then proceeds to depart into
a lengthy narrative, not about habitat type, but some typing using inadequate date, insufficient field examination and data and computer modelling that fails to follow
Pfister's habitat typing methodology.

A viable alternative for Forest Plan Amendment to the old growth standard, big game habitat effectiveness and security cover does exist. Changing the big game security standard and habitat effectiveness to come into compliance is not sufficient in and of itself; the standard must adequately conserve secure habitat.

REMEDY:
Withdraw the Draft Decision Notice.

We suggest that HABITAT TYPE, NOT "***...Vegetation condition class (VCC; formally known as fire regime condition class)...***" is the foundation and best available science to determine characteristics of ecosystem composition and structure. (Pfister, et al. (1977). Please find Pfister attached. All this "vegetative" mumbo-jumbo is used to avoid Pfister and proper, foundational identification of the habitat type. The Forest Service is looking at the amendment as "tree farmers" not scientists studying natural forest succession/evolution.

Viable and reasonable alternative to site specific amendments to the Forest Plan standards for old growth and big

game security cover and habitat effectiveness would be an amendment that adequately conserves secure habitat, habitat effectiveness for big game and old growth dependent species in the planning area.

Such an amendment would comply with the 1982 NFMA regulations by using available science and consultation with State biologists to (a) ensure well-distributed habitat for elk throughout the planning area, and (b) address access and dispersal problems during the hunting season and (c) adequate habitat for old growth dependent species. See 36 C.F.R. §219.19 (1982).

The Forest Service's failure to disclose and analyze the cumulative effects of reasonably foreseeable site-specific Forest Plan amendments to exempt other projects from the old growth, big game security and habitat effectiveness violates NEPA.

In Dombeck, the Ninth Circuit held that the Forest Service must analyze the cumulative effects of reasonably foreseeable Forest Plan amendments:

It makes no sense for the FS to be logging the ponderosa pine and Douglas-fir old growth types down to eight trees per acre of large old trees as the amendments allow while claiming to still be retaining old-growth status. The stand structure will be greatly simplified, many snags would be

taken down under the justification as safety hazards. The ground will be trenched, compacted and weeded. Most other trees of any size and species will be removed. The tree spacing will lack diversity, the wind will blow and only time will tell how long those selected eight live trees will be left standing, somedisplaying their new cable scars and torn limbs. We assume the BNF would choose eight trees that look like they will live for a long time. Therefore they may be selecting against thinning crowns, heartrot, broken tops, leaning trees, etc. (i.e., true old-growth character). Logging downto 8 trees per acre is not supported by the Green, et al., 1992.

Also the FS fails to address most all other tree species (Engelmann spruce, subalpine fir, aspen, lodgepole and to some degree whitebark pine) importance for old growth considerations.

And this doesn't even consider all the small pockets that the FS will log of large, old ponderosa pine and Douglas-fir that are not of big enough acreage for the FS to label as old growth, and all the big spruce and occasional big subalpine fir that will be too young according to the foresters who do not know site potential for this area even though they are as big as they get on the west slope of the Sapphires. There is no diameter or age limit for any of the non-old growth cutting units.

Forest Plan monitoring requirements have not been followed. They do not disclose if the management indicator species (MIS) pine marten and pileated woodpecker are at naturally abundant levels. Habitat for those, and other Sensitive species would be reduced by the amendments in the absence of viability assurance. For viability to be insured, the FS must provide a sound, scientifically based analysis that determines the quantity and quality of habitat needed for MIS and TES species.

For Management Area 3a, Standard 3(c)(2) requires "Old growth units should be 40 acres and larger, distributed over the management area. ...each third order drainage will be maintained in old growth. Provide 40-acre stands of old growth by coordinating management activities in this area with activities in adjacent management areas especially Management Area 3b, riparian areas."

The FEIS completely ignores Forest Plan MA 3b standard 8, which requires "50 percent old growth in fisheries riparian areas and 25 percent old growth in nonfisheries riparian areas.

Riparian old growth should be coordinated with adjacent management area old growth to provide for adequate distribution and 40 acre or larger units."

MA 3b "supports abundant and diverse vegetative conditions and the most productive sites on the Forest. It in-

cludes 100 feet on either side of smaller streams or the area defined by water-influenced vegetation, whichever is greater. ...These riparian areas are surrounded by or are inclusions within Management Areas 1, 2, and 3a." (Forest Plan at III-22.)

In DEIS comments on the BNF's Como Forest Health Project, AWR & FOB raised the issue of the quality of the BNF forestwide old-growth inventory, citing from that DEIS: "Information concerning the condition of old growth stands outside of the project area is incomplete at thistime." (3-108.) AWR & FOB asked, "Does this mean that the forestwide inventory of old growth is incomplete or inaccurate?" The FS responded:

With that response to comments, the FS states there is some other forestwide inventory of old growth other than the invalid FIA estimation, and that its accuracy is lacking.

The BNF's Five Year Review states, "The quantity and distribution of old growth needs to be placed in the context of the range of natural variation to better ensure viability of old growth dependent wildlife species."

Bate et al. (2007), found that snag numbers were lower adjacent to roads due to removal for safety considerations, removal as firewood, and other management activities. Other literature has also indicated the potential for reduced

snag abundance along roads (Wisdom et al. 2000).This comment was one of the many ignored by the FS.

The amendment is therefor in violation of NEPA, NFMA and the APA .

The amendments does not meet the purpose and need of the EA. Please see the attached paper by Baker et al. 2023. This landmark study found a pattern of "Falsification of the Scientific Record" in government-funded wildfire studies.

This unprecedented study was published in the peer-reviewed journal *Fire*, exposing a broad pattern of scientific misrepresentations and omissions that have caused a "falsification of the scientific record" in recent forest and wildfire studies funded or authored by the U.S. Forest Service with regard to dry forests of the western U.S. Forest Service related articles have presented a falsified narrative that historical forests had low tree densities and were dominated by low-severity fires, using this narrative to advocate for its current forest management and wildfire policies.

However, the new study comprehensively documents that a vast body of scientific evidence in peer-reviewed studies that have directly refuted and discredited this narrative were either misrepresented or omitted by agency publications. The corrected scientific record, based on all of the evidence, shows that historical forests were highly variable

in tree density, and included "open" forests as well as many dense forests. Further, historical wildfire severity was mixed and naturally included a substantial component of high-severity fire, which creates essential snag forest habitat for diverse native wildlife species, rivaling old-growth forests.

These findings have profound implications for climate mitigation and community safety, as current forest policies that are driven by the distorted narrative result in forest management policies that reduce forest carbon and increase carbon emissions, while diverting scarce federal resources from proven community wildfire safety measures like home hardening, defensible space pruning, and evacuation assistance.

"Forest policy must be informed by sound science but, unfortunately, the public has been receiving a biased and inaccurate presentation of the facts about forest density and wildfires from government agencies," said Dr. William Baker in their press release announcing the publication of their paper.

"The forest management policies being driven by this falsified scientific narrative are often making wildfires spread faster and more intensely toward communities, rather than helping communities become fire-safe," said Dr. Chad Hanson, research ecologist with the John Muir Project in the same press release. “We need thinning of small trees adjacent to homes, not backcountry management.”

"The falsified narrative from government studies is leading to inappropriate forest policies that promote removal of mature, fire-resistant trees in older forests, which causes increased carbon emissions and in the long-run contributes to more fires" said, Dr. Dominick A. DellaSala, Chief Scientist, Wild Heritage, a Project of Earth Island Institute concluded in the press release.

Please also find attached DellaSala 2022 which also shows the amendments do not follow the best available science.

Please see the attached paper by Faison et al. 2023 that finds that unmanaged forests are the most resilient.

The amendment is therefor in violation of the purpose and nee, NEPA, NFMA and the APA .

WILDLIFE VIABILITY

We wrote in our comments starting with:

Considering potential difficulties of using population viability analysis at the project analysis area level (Ruggiero,

et. al., 1994), the cumulative effects of carrying out multiple projects simultaneously across the BDNF makes it imperative that population viability be assessed at least at the forestwide scale (Marcot and Murphy, 1992). Also, <u>temporal</u> considerations of the impacts on wildlife population viability from implementing something with such long duration as a Forest Plan must be considered (id.) but this has never been done by the BDNF. It is also of paramount importance to monitor population during the implementation of the Forest Plan in order to validate assumptions used about long-term species persistence i.e., population viability (Marcot and Murphy, 1992; Lacy and Clark, 1993).

Please demonstrate that this proposed amendments will leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such as flammulated owls and goshawks. Loggers are required to follow OSHA safety standards. Will these standards require snags to be cut down? After snags are cut down for safety for OSHA requirements will there still be enough snags left for old growth sensitive species?

The Forest Service responded:

Population persistence, as defined and required by the 2012 Planning Rule, is required to be conducted at the

scale of a plan area and during Forest Plan revision. This ties directly into cumulative effects analyses for ongoing projects or projects reasonably likely to occur.

Again, population persistence, as defined and required by the 2012 Planning Rule, is required to be conducted at the scale of a plan area and during Forest Plan revision.

Effects to Management indicator species and TES are disclosed in the EA. The amendment will not adversely impact sensitive species habitat.

The biggest factors impacting wildlife in the BNFare the cumulative effects of past management, which has reduced old growth and one of old growth's key characteristics—snag habitat—below levels that can support well-distributed wildlife populations. And the proposed amendments will make the situation worse for the short- and long-term for this habitat.

The FS does not cite any science to support its claims that its management will result in snags and down logs in abundance to someday, maybe, several decades later, support viable populations. No monitoring is cited to support the project claims of benefits to snag and down log-dependent species' population numbers or distribution.

The FS relies upon Region-wide database analyses by Samson to conclude that species viability is assured, although

the age and reliability of such data is generally not addressed properly.

Schultz (2010) states that the Sampson assessments "suffers from several problems, the most prominent being that the analysis is based on habitat availability, which alone is insufficient for understanding the status of populations (Noon et al. 2003, Mills 2007)". Schultz (2010) recommendations generally call for more peer review of large-scale assessments and project level management guidelines and suggests that we must adopt more robust scientifically sound monitoring and measurable objectives and thresholds if we are to be successful in meeting obligation of maintaining viable populations of all native and desirable non-native wildlife species.

An interesting observation of the Sampson assessment is that it focuses on short-term viability and long-term viability using what is called the 50/500 rule (Bessinger 2002). In fact, all six species considered in Sampson's analysis are all evaluated for short-term viability using this "rule of thumb."

Sampson did not evaluate long-term viability for the fisher and marten, but he did do so for the goshawk, pileated woodpecker, flammulated owl and black-backed woodpecker. Sampson concluded that "In regard to long-term viability, this conservation assessment has found that long-term habitat conditions in terms of Representativeness, Re-

dundancy, and Resiliency are “low” for all species.” The EA and DDN did not disclose Sampson’s long-term viability

conclusions. In his analysis, Sampson merely uses home range size for each species and makes assumptions of overlap in ranges of males and females. Home range size is then multiplied by the effective population size (ne - a number that includes young and non-breeding individuals - Allendorf and Ryman 2002) and this is amendment as the amount of habitat required to maintain a minimal viable population in the short-term. This simplistic approach ignores a multitude of factors and makes no assumptions about habitat loss or change over time. For the fisher and marten, Samson uses a “critical habitat threshold” as calculated in another publication (Smallwood 2002).

There are several problems with such an approach and the risk to the species would be extremely high if any of the species ever reached these levels in the Northern Region. Surely, all six species would be listed as endangered if this was to occur and the probabilities for their continued existence would be very low. There is also no way that National Forest Management Act (NFMA) and Endangered Species Act (ESA) requirements could be met in an attempt to maintain species across their range and within individual National Forests with such an approach. Mills (2007) captured the futility of such approach in his book on Conservation of Wildlife Populations: “MVP is problematic for both philosophical and scientific reasons.

Philosophically, it seems questionable to presume to manage for the minimum number of individuals that could persist on this planet. Scientifically, the problem is that we simply cannot correctly determine a single minimum number of individuals that will be viable for the long term, because of inherent uncertainty in nature and management..."

Samson also admits that "Methods to estimate canopy closure, forest structure, and dominant forest type may differ among the studies referred to in this assessment and from those used by the Forest Service to estimate these habitat characteristics" and that "FIA sample points affected within the prior 10 years by either timber harvest or fire are excluded in the estimates of habitat for the four species" and finally that "FIA does not adequately sample rare habitats". This especially concerning given the reliance on the FIA queries to identify suitable habitat and the fact that the data used in the analysis is now over 20 years old. Thus, the short-term viability analysis is scientifically unsound and it is very doubtful it could sustain scientific peer review. Schultz (2010) captured this sentiment in her critique: "some interviewees also thought the work should be peer reviewed, especially if it was conducted by USFS management, and several were skeptical that it would survive such review."

REMEDY

Withdraw the Draft Decision Notice and FONSI

CANADA LYNX (THREATENED SPECIES)

We wrote in our comments:

This proposed amendments to the old growth definition in the Forest Plan would allow the logging of thousands of acres of old growth without any analysis of whether that forest is necessary for conservation as winter lynx habitat. Please take a hard look at this factor. By failing to include a provision to protect winter lynx habitat, the proposed amendments fails to apply the best available science and implement the measures necessary for lynx conservation, as required by the ESA.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. Please identify the amount of non or low cover areas that will be created under the proposed amendments. Please use the best available science in regard to lynx habitat which is now Kosterman's masters Thesis, "Correlates of Canada Lynx Reproductive Success in Northwestern Mon-tana" and Holbrook. Please find both attached. They found that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This contradicts the agency's assumption in the Lynx Amendments that 30% of lynx habitat can be clearcut,

and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery. Holbroo's and Kosterman's study demonstrates that the Lynx Amendments standards are not adequate for lynx viability and recovery, as assumed by the Forest Service

The current best science indicates that lynx winter foraging habitat is critical to lynx persistence (Squires et al. 2010), and that this habitat should be "abundant and well-distributed across lynx habitat." (Squires et al. 2010; Squires 2009.) Existing openings such as clearcuts not yet recovered are likely to be avoided by lynx in the winter. (Squires et al. 2010; Squires et al. 2006.)

Lynx winter habitat, provided only in older, multi-storied forests, is critical for lynx preservation. (Squires et al. 2010.) Winter is the most constraining season for lynx in terms of resource use; starvation mortality has been found to be the most com- mon during winter and early spring. (Squires et al. 2010.) Prey availability for lynx is highest in the summer. (Squires et al. 2013.)

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio- tagged lynx with home ranges including 2- lane highways crossed them. Openings, whether

small in uneven-aged management, or large with clearcutting, remove lynx winter travel habitat on those affected acres, since lynx avoid openings in the winter. (Squires et al. 2010.)

Squires et al., 2010 reported that lynx winter habitat should be "abundant and spa- tially well- distributed across the landscape. Those authors also noted that in heavi- ly managed landscapes, retention and recruitment of lynx habitat should be a prior- ity.

Is the proposed amendments to the Forest Plan adequate to ensure conservation and recovery of lynx?

The Endangered Species Act requires the FS to insure that the proposed amendments to the Forest Plan is not likely to result in the destruction or adverse modification of lynx habitat. 16 U.S.C. §1536(a)(2). Activities that may destroy or adversely modify habitat are those that alter the physical and biological features to an extent that appre- ciably re- duces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644.

Please analyze the impacts to lynx in the individual LAUs of the proposed amendments. The proposed amendments violates the NFMA if it fails to insure the viability of lynx. According to the 1982 NFMA regulations, fish and wildlife must be managed to maintain viable populations of Canada lynx in the planning area. 36 C.F.R. 219.19. The FS has not shown that lynx will be well-distributed in the planning area. The FS has not addressed how the

proposed amendments's adverse modification of denning and foraging habitat will impact distribution. This is important because the agency readily admits that the LAUs already contain a "relatively large percentage of unsuitable habitat." The NRLMD ROD at 40 states that: The national forests subject to this new direction will provide habitat to maintain a viable population of lynx in the northern Rockies by maintaining the current distribution of occupied lynx habitat, and maintaining or enhancing the quality of that habitat."

Please disclose if the FS conducted lynx occurrence surveys of habitat in the LAUs.

Please disclose if surveys target snowshoe hare occurrence data in these stands newly considered unsuitable for lynx. Also, the EA doesn't indicate if the FS surveyed any areas (proposed for logging and/or burning or not) thought to not be lynx habitat based on mapping or stand data were surveyed to confirm unsuitable habitat conditions.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. Please identify the amount of non-cover or low-cover areas that will be created from the project.

It appears the FS doesn't have a coherent strategy for recovering lynx from their Threatened status, including linking currently populated areas with each other through important linkages such as BNF LAUs.

Please analyze and disclose cumulative impacts of proposed amendments on lynx, such as snowmobiles. As the KNF's Galton FEIS states, "The temporal occurrence of forest uses such ... winter (skiing and snowmobiling) ... may result in a temporary displacement of lynx use of that area..."

Please quantify and disclose the cumulative effects on Canada lynx due to trapping or from use of the road and trail networks in the BNF under the proposed amendments.

Please analyze and disclose how lynx habitat capacity for denning will be impaired by Proposed amendments.

The USFWS listed the Canada lynx as a threatened species under the Endangered Species Act in 2000 due to "lack of guidance for conservation of lynx and snowshoe hare habitat..." and subsequent authorization of actions that may cumulatively adversely affect the lynx. Relatively little is known about lynx in the contiguous United States. Historically, lynx inhabited states spanning from Maine to Washington, but it is unknown how many lynx remain.

Lynx are highly mobile and generally move long distances [greater than 60 mi. (100 km.)]; they disperse primarily

when snowshoe hare populations decline; subadult lynx disperse even when prey is abundant, presumably to establish new home ranges; and lynx also make exploratory movements outside their home ranges. 74 Peg. Reg. at 8617. The contiguous United States is at the southern edge of the boreal forest range, resulting in limited and patchy forests that can support snowshoe hare and lynx populations.

Lynx subsist primarily on a prey base of snowshoe hare, and survival is highly dependent upon snowshoe hare habitat, forest habitat where young trees and shrubs grow densely. In North America, the distribution and range of lynx is nearly "coincident" with that of snowshoe hares, and protection of snowshoe hares and their habitat is critical in lynx conservation strategies.

Since more often than not when the FS conducts logging projects in LAUs surveys of stands for lynx habitat result in less suitable habitat than previously assumed, the FS needs to take a few steps backward and consider that its range-wide Canada lynx suitable habitat estimations were too high.

Squires et al. (2013) noted that long-term population recovery of lynx, as well as other species as the grizzly bear, require maintenance of short and long-distance connectivity. The importance of maintaining lynx linkage zones is also recognized by the FS's Lynx Conservation Assessment and Strategy (LCAS), as revised in 2013, which stresses that landscape connectivity should be maintained to allow for movement and dispersal of lynx.

Squires et al. (2013) noted in their research report that some lynx avoided crossing highways; in their own report, they noted that only 12 of 44 radio-tagged lynx with home ranges including 2- lane highways crossed them.

The current best science indicates that lynx winter foraging habitat is critical to lynx persistence (Squires et al. 2010), and that this habitat should be "abundant and well-distributed across lynx habitat." (Squires et al. 2010; Squires 2009.) Existing openings such as clearcuts not yet recovered are likely to be avoided by lynx in the winter. (Squires et al. 2010; Squires et al. 2006a.)

Lynx winter habitat, provided only in older, multi-storied forests, is critical for lynx preservation. (Squires et al. 2010.) Winter is the most constraining season for lynx in terms of resource use; starvation mortality has been found to be the most common during winter and early spring. (Squires et al. 2010.) Prey availability for lynx is highest in the summer. (Squires et al. 2013.)

Openings, whether small in uneven-aged management, or large with clearcutting, remove lynx winter travel habitat on those affected acres, since lynx avoid openings in the winter. (Squires et al. 2010.)

Squires et al., 2010 reported that lynx winter habitat should be "abundant and spatially well- distributed across the landscape." Those authors also noted that in heavily managed landscapes, retention and recruitment of lynx habitat should be a priority.

The LCAS (Ruediger et al. 2000) recommends, until conclusive information is developed concerning lynx management, the agencies retain future options; that is, choose to err on the side of maintaining and restoring habitat for lynx and their prey. To err on the side of caution, the KNF would retain all remaining stem exclusion forests for recruitment into lynx winter habitat, so that this key habitat would more closely resemble historic conditions.

As early as 2000, the LCAS noted that lynx seem to prefer to move through continuous forest (1- 4); lynx have been observed to avoid large openings, either natural or created (1-4); opening and open forest areas wider than 650 feet may restrict lynx movement (2-3); large patches with low stem densities may be functionally similar to openings, and therefore lynx movement may be disrupted (2-4). Squires et al. 2006a reported that lynx tend to avoid sparse, open forests and forest stands dominated by small-diameter trees during the winter. Squires et al. 2010 again reported that lynx avoid crossing clearcuts in the winter; they generally avoid forests composed of small diameter saplings in the winter; and forests that were thinned as a silvicultural treatment were generally avoided in the winter.

Squires et al. 2010 show that the average width of openings crossed by lynx in the winter was 383 feet, while the maximum width of crossed openings was 1240 feet.

Recent scientific findings undermine the Forest Plan/ NRLMD direction for management of lynx habitat. This

creates a scientific controversy the FS fails to resolve, and in fact it essentially ignores it.

For one, Kosterman, 2014 found that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. Young regenerating forest should occur only on 10-15% of a female lynx home range, i.e. 10-15% of an LAU. This renders inadequate the agency's assumption in the Forest Plan/ NRLMD that 30% of lynx habitat can be open, and that no specific amount of mature forest needs to be conserved. Kosterman, 2014 demonstrates that Forest Plan/ NRLMD standards are not adequate for lynx viability and recovery.

Also, the Forest Plan essentially assumes that persistent effects of vegetation manipulations other than regeneration logging and some intermediate treatments are essentially nil. However, Holbrook, et al., 2018 "used univariate analyses and hurdle regression models to evaluate the spatio-temporal factors influencing lynx use of treatments." Their analyses "indicated ...there was a consistent cost in that lynx use was low up to ~10 years after all silvicultural actions." (Emphasis added.) From their conclusions:

First, we demonstrated that lynx clearly use silviculture treatments, but there is a ~10 year cost of implementing any treatment (thinning, selection cut, or regeneration cut) in terms of resource use by Canada lynx. This tempo-

ral cost is associated with lynx preferring advanced regenerating and mature structural stages (Squires et al., 2010; Holbrook et al., 2017a) and is consistent with previous work demonstrating a negative effect of precommercial thinning on snowshoe hare densities for ~10 years (Homyack et al., 2007). Second, if a treatment is implemented, Canada lynx used thinnings at a faster rate post- treatment (e.g.,~20 years posttreatment to reach 50% lynx use) than either selection or regeneration cuts (e.g., ~34–40 years post-treatment to reach 50% lynx use). Lynx appear to use regeneration and selection cuts similarly over time suggesting the difference in vegetation impact between these treatments made little difference concerning the potential impacts to lynx (Fig. 4c). Third, Canada lynx tend to avoid silvicultural treatments when a preferred structural stage (e.g., mature, multi-storied forest or advanced regeneration) is abundant in the surrounding landscape, which highlights the importance of considering landscape-level composition as well as recovery time. For instance, in an area with low amounts of mature forest in the neighborhood, lynx use of recovering silvicultural treatments would be higher versus treatments surrounded by an abundance of mature forest (e.g., Fig. 3b). This scenario captures the importance of post-treatment recovery for Canada lynx when the landscape context is generally composed of lower quality habitat. Overall, these three items emphasize that both the spatial arrangement and composition as well as recovery time are central to balancing silvicultural actions and Canada lynx conservation.

So Holbrook et al., 2018 fully contradict Forest Plan assumptions that clearcuts/regeneration can be considered useful lynx habitat as early as 20 years post-logging.

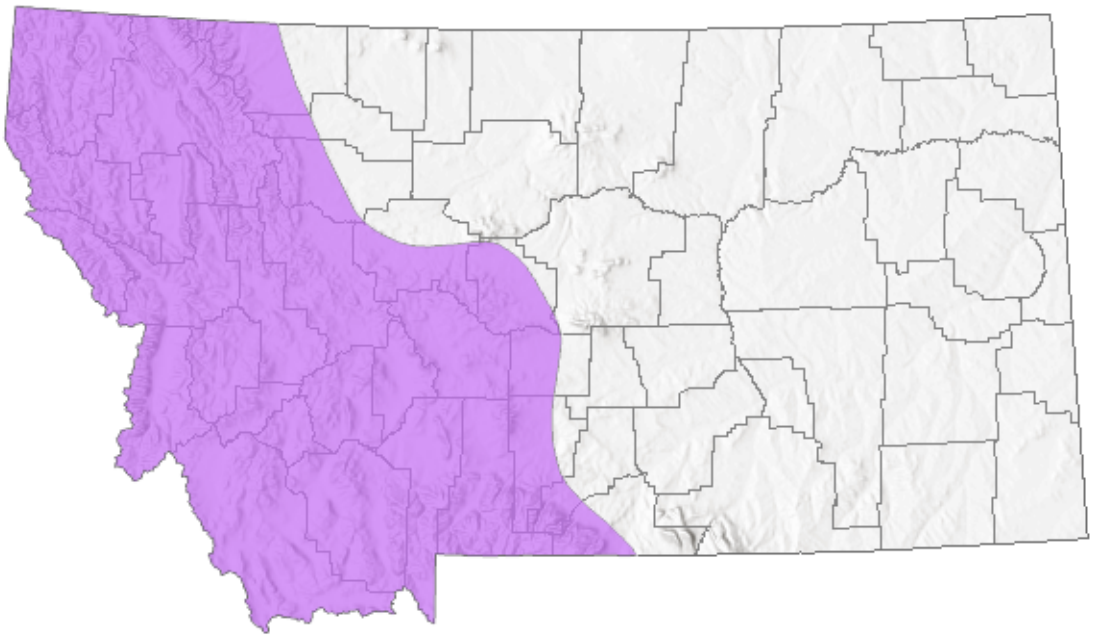
Results of a study by Vanbianchi et al., 2017 also conflict with Forest Plan/NRLMD assumptions: "Lynx used burned areas as early as 1 year postfire, which is much earlier than the 2–4 decades postfire previously thought for this predator." The NRLMD erroneously assumes clearcutting/regeneration logging have basically the same temporal effects as stand-replacing fire as far as lynx re-occupancy.

Kosterman, 2014, Vanbianchi et al., 2017 and Holbrook, et al., 2018, Holbrook 2019 demonstrate that Forest Plan direction is not adequate for lynx viability and recovery, as the FS assumes. Holbrook 2019 such all lynx habitat must be surveyed. Please do this.

Please describe the quantity and quality of habitat that is necessary to sustain the viability of the Canada lynx and explain how the proposed amendments to the Forest Plan will effect lynx and their habitat.

The Forest Service responded that there are no lynx in the BNF.

The Montana Department of Fish Wildlife and Parks disagrees. Their map shows the entire BNF is occupied lynx habitat.



https://fieldguide.mt.gov/speciesDetail.aspx?elcode=AMA-JH03010

The DDN and FONSI are in violation of NEPA, NFMA, the APA and the ESA.

The Montana Federal District Court ruled on 10/15/2018 that the Forest Service must complete forest-wide consultation with the U.S. Fish & Wildlife Service (USFWS) to determine effects Forest Plans may have on lynx. For the BNF, this has not been done.

The USFWS has been directed by the federal court to re-consider the Bitterroot as lynx critical habitat. The FS should be evaluating lynx breeding habitat (Primary Constituent Elements) on the BNF and protecting it. This has not been done. The Forest Service needs to protect all of the old growth and mature forests in case they will be designated as lynx critical habitat.

The Federal District Court of Montana ordered the USFWS to reconsult on lynx critical habitat because they did not base lynx critical habitat on where lynx were at the time of listing in 2000.

Lynx were in the BNF at the time of listing so the Forest Service needs to consult with the USFWS to see if theses amendments could effect lynx critical habitat.

Kosterman, 2014 finds that 50% of lynx habitat must be mature undisturbed forest for it to be optimal lynx habitat where lynx can have reproductive success and no more than 15% of lynx habitat should be young clearcuts, i.e. trees under 4 inched dbh. This contradicts the agency's assumption in the Lynx Amendment that 30% of lynx habitat can be clearcut, and that no specific amount of mature forest needs to be conserved. It is now the best available science out there that describes lynx habitat in the Northern Rockies related to lynx viability and recovery.

Kosterman, 2014 demonstrates that the Northern Rockies Lynx Management Direction (NRLMD) Amendment standards are not adequate for lynx viability and recovery, as assumed by the Forest Service.

Holbrook 2019, attached, finds that the entire BNF must be searched for lynx.

The FS also must complete surveys for lynx required by the 2007 BiOp for the NRLMD.

The Forest Service's failure to take a hard look at lynx presence and the Forest Plan's potential impacts on lynx, using the best available science, including the agency's failure to assess the Forest Plan's impacts on lynx travel/linkage corridors, violates NEPA. The Forest Service's failure to include binding legal standards aimed at conserving and recovering ESA-listed lynx on the Forest in the Forest Plan violates NFMA and the ESA.

The FS approval and implementation of the NRLMD is arbitrary and capricious, violates NEPA's hard look requirement and scientific integrity mandate and fails to apply the best available science necessary to conserve lynx. The NRLMD contains no protection or standard for conservation of winter lynx habitat (old growth forests). This amendment allows the logging of thousands of acres of old growth without any analysis of whether that forest is necessary for conservation as winter lynx habitat. The FEIS fails

to take a hard look at this factor is in violation of NEPA. By failing to include a provision to protect winter lynx habitat, the NRLMD fails to apply the best available science and implement the measures necessary for lynx conservation, as required by the ESA. The NRLMD also arbitrarily exempts WUI lands from lynx habitat protection.

The Forest Plan amendment analysis and impacts on ESA-listed lynx violate ESA, NFMA, and NEPA.

The current science demonstrates that lynx must travel between areas of high hare densities and resist traveling through low cover areas in winter. The EIS fails to identify the amount of non- cover or low-cover areas that will be created from the amendments.

The Endangered Species Act requires the FS to insure that the amendment is not likely to result in the destruction or adverse modification of critical habitat. 16 U.S.C. §1536(a)(2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for lynx.

74 Fed. Reg. 8644. The NRLMD as applied in the amendments violates the ESA by failing to use the best available science to insure no adverse modification of critical habitat.

The NRLMD carves out exemptions from Veg Standards S1, S2, S5, and S6. In particular, fuel treatment projects may occur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, provided they do not occur on more than 6% of lynx habitat on each National Forest. See NRLMD ROD Attachment 1, pages 2-3. Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% forestwide without looking at the individual characteristics of each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the site- specific level. It does not allow the agencies to make a gross determination that allowing lynx critical habitat to be destroyed forestwide while not appreciably reduce the conservation value.

The proposed amendment violates the NFMA by failing to insure the viability of lynx. According to the 1982 NFMA regulations, fish and wildlife must be managed to maintain viable populations of Canada lynx in the planning area. 36 C.F.R. 219.19. The FS has not shown that lynx will be well- distributed in the planning area. The FS has not addressed how the amendments's adverse modification of habitat will impact distribution. The NRLMD ROD at 40 states that: The national forests subject to this new direction will provide habitat to maintain a viable population of lynx in the northern Rockies by maintaining the current distribu-

tion of occupied lynx habitat, and maintaining or enhancing the quality of that habitat."

A big problem with the Forest Plan (as amended by the NRLMD) is that it allows with few exceptions the same level of industrial forest management activities that occurred prior to Canada lynx ESA listing. The NRLMD appeal decision requires the FS to consult with the USFWS regarding lynx and lynx critical habitat. The BA states that the effects determination for lynx is "may affect, is not likely to adversely affect." However this is in error; the amendments is likely to adversely affect the Canada lynx. Lynx are likely to be exposed to project activities authorized bt the amendment and will respond in a negative manner to the exposure. So the amendment must have an incidental take permit from the USFWS and is in violation of the ESA, NFMA, the APA and NEPA. The ESA

(Section 3) defines take as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, collect or attempt to engage in any such conduct". The USFWS further defines "harm" as "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", and "harass" 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".

The amendment will harm lynx.

Remedy: The FS must complete forest-wide consultation with the U.S. Fish and Wildlife Service to determine what effects the Forest Plan amendments may have on lynx.

We wrote in our comments:

GRIZZLY BEAR

We wrote in our comments:

The current best science indicates that connectivity between the Yellowstone and Glacier ecosystems are necessary for the long term genetic health of both populations, especially bears in the Yellowstone ecosystem. The BNF lies within an identified linkage zone for grizzly bears as well as lynx. However, there are no management standards for either species to ensure connectivity is maintained, based on the current best science as required by the ESA. This requires limits on open road densities, limits on travel barriers, and retention of at least 50% dense, older forest habitats for lynx. Grizzly bears are known to be expanding into this landscape, and it is also historic habitat for lynx. Since lynx occupied this area at the time of listing as a threatened species, this landscape may qualify as critical habitat. It's suitability for lynx must therefore be retained until a final deci- sion is made

on critical habitat. And suitability for grizzly bear use must also be retained/restored.

Please analysis and impacts on ESA-listed grizzly bear and lynx of the proposed amendments. Because there are endangered species present and will be effect, the Forest Service must complete and EIS. The Project EIS and BA/ BiOp must disclose and apply the best available science on recommended open motorized route density, total motorized route density, and core habitat thresholds for NCDE grizzly bears under the proposed amendments.

Please address what the level of security, OMARD, and TMARD are recommended for grizzly bears in the NCDE, and how these compare to those available in the BNF. This comparison would demonstrate compatibility of existing and planned management of grizzly bears to the general public.

Please include an analysis of TMARD before or after the implementation of the proposed amendments. Decommissioning of roads will reduce OMARD, but will not reduce TMARD. The road would have to be completely obliterated, and no future use can be planned (IGBC 1998). The claim that all new temporary roads will be obliterated, and thus no add to TMARD after the projects are completed, is never actually verified in the project FEIS.

Please analyze how the proposed amendments result in the increase or decrease of clearcutting existing cover, including openings up to large clearcuts and how this will affect grizzly bear and lynx movement through this landscape.

The Forest Service responded:

MRD and TMRD are requirements in core habitat within grizzly bear recovery zones/ecosystems where Bear Management Units have been defined. The Bitterroot Ecosystem is contained entirely within the Selway- Bitterroot Wilderness areas and no Bear Management Units have been defined by the USFWS. The Forest completed consultation with the USFWS for the amendment, which is in the project file.

This is a comment that apparently applies to a different project. The amendment does not propose clearcutting. Site-specific projects will determine vegetation treatments and their effects.

The Forest completed consultation with the USFWS for the amendment, which is in the project file. The amendment does not authorize any activities, but provide guidelines for future planning of project-specific activities. Any future projects will have to complete consultation with respect to T&E species with USFWS.

The amendment, by itself, has no direct effect on grizzly habitat or road densities.

The Forest Service and the USFWS will violate the ESA, the NEPA, and the NFMA if the amendments is implemented, because of the following:

-the BDF has no conservation strategy for grizzly bears on the Forest.

-the ability of grizzly bears to traverse through the BNF has been never evaluated.

-the current best science, including levels of grizzly bear security, open and total road densities, was not used in evaluating impacts on grizzly bear during as well as after implementation.

-mitigation measures cited by both the Forest Service and the USFWS for grizzly bears as per landscape levels of OMRTD are invalid as direct effects are washed out.

-mitigation measures as per OMRTD at the landscape level do not apply to amendments implementation, and do therefore no mitigate disturbance impacts to grizzly bears from motorized routes during project activities authorized under the amendment.

-the cumulative effects of proposed activities on the BNF are not evaluated.

-Please include an alternative that would restore grizzly bear habitat in the BNF to improve habitat connectivity.

REMEDY

Withdraw the DDN and write an EIS after the FWS writes their EIS for grizzly management in the Bitterroot ecosystem.

The U.S. Fish and Wildlife Service responded to the Montana federal district court recent ruling by providing a timeline showing how the Service would carry out a new environmental impact study of grizzly bear recovery in the Bitterroot ecosystem. On March 15, 2023, the court found the Service illegally delayed actions related to recovering grizzly bears and ordered it to conduct another public process to determine the correct course of action.

The Service published the original EIS and rule in 2000, where it decided to create an experimental population of 25 grizzlies in the Bitterroot ecosystem. In addition to transplanting 25 bears, the 2000 rule also required the Service to create a citizen management committee and to educate the public on bear-aware sanitation and safety.

But in 2001, concerned by a lawsuit brought by the state of Idaho, the Service reversed course, saying it chose the “no-action” alternative instead of creating an experimental population. From that point on, the agency took no action.

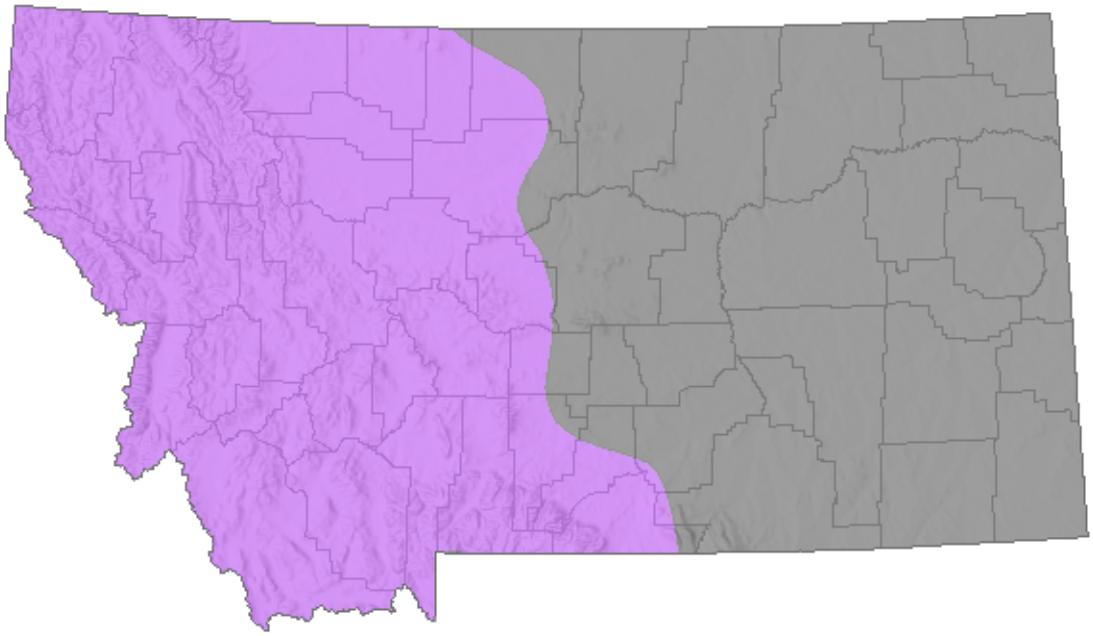
Since then, grizzly bears have been migrating out of two nearby recovery areas - the Northern Continental Divide and the Yellowstone - into other parts of Montana. A few have managed to make their way to the Bitterroot ecosystem, although some were captured and moved away instead of being allowed to immigrate naturally.
It is putting the cart before the horse to amend the forest plan before the USFWS completes their EIS on grizzly management in the Bitterroot ecosystem.

The agencies must reinitiate and complete reconsultation on the Bitterroot Forest Plan to address current grizzly bear distribution and suitable habitat; this has not yet been done.

ESA regulations mandate that "[r]einitiation of formal consultation is required .

. . (b) If new information reveals effects of the action that may affect listed species .
. . in a manner or to an extent not previously considered . . . ." 50 C.F.R.
§402.16(b); see Alliance for the Wild Rockies v. USDA, 772 F.3d 592,601 (9th
Cir.2014).

Please see the following Montana Fish Wildlife and Parks map of occupied grizzly habitat.



http://fieldguide.mt.gov/speciesDetail.aspx?elcode=AMA-JB01020

As of 2018, an article in the July/August 2020 issue of Montana Outdoors, the Montana Fish Wildlife and Parks magazine included a map showing the distribution of verified and possible grizzly bear locations. https://issuu.com/montanaoutdoors/docs/outlierbears

Please see attached.

Please incorporate this into your analysis.

The Bitterroot National Forest has occupied grizzly bear habitat though out. Management must focus on grizzly bear habitat maintenance, improvement and minimization of grizzly-human- conflict. Since grizzly are listed as threatened under the Endangered Species Act, management decisions shall favor the needs of the grizzly bear when grizzly habitat and other land use values compete. The Draft EA and the Forest Plan do not disclose if adverse or cumulative impacts are consistent with the requirement to prioritize the needs of the grizzly bear for the applicable Management Situations.

Additional direction in the Interagency Grizzly Bear Guidelines (IGBG) (1986) for MS1 habitat included the following for timber management:

Logging and/or fire management activities which will adversely affect grizzly bear populations and/or their habitat will not be permitted; adverse population effects are population reductions and/or grizzly positive conditions; adverse habitat effects are reduction in habitat quantity and/or quality.

Schwartz et al. (2010) noted that management for grizzly bears re-quires not only the provision of security area, but control of open road densities between security areas. Otherwise, grizzly bear mortality risks will be high as bears attempt to move across highly roaded landscapes to another security area. There needs to be direction regarding existing road densities located outside of and between security areas.

Grizzly bears are winter-sleepers rather than true hibernators. If high density motorized routes are known to disturb, displace, habituate, and raise mortalities among grizzlies in spring, summer, and fall, there's no logical, or scientific reason to believe they don't do the same to sleeping bears in winter.

The Forest Plan's desired condition for patches which includes a range of larger opening sizes may result in adverse effects if lack of cover leads to under use of foraging habitat or increased risk of human-grizzly bear conflicts causing mortality of a grizzly bear. The EA fails to show that the openings to be newly created by the amendments don't exceed levels of current incidental take.

The current management strategy allows "temporary" reductions in Core and "temporary" increases in road density as if the habitat would then get reprieve from such "temporary" adverse effects. However, the FS recognizes no genuine limitations on how much, how often and for how long these "temporary" current protections by allowing such harmful activities in Security Core as the opening of roads to public motorized uses like firewood gathering, unlimited amounts of non-motorized trails and human activity, and logging projects allowed by the amendment that reduce Security Core for half a decade. The EA and the DDA do not demonstrate that the amendments will have an adequate regulatory mechanism to protect grizzly habitat,

Moreover, excusing logging roads from limits on Total Motorized Route Density even though they have not been decommissioned, have not been removed from the road sys-

tem, and are instead being “stored” for future logging—which also makes them more vulnerable to continued use as trails. (Hammer, 2016.)

The EA fails to consider loss of vegetative cover from the massive clearcutting proposed, which will affect security for grizzly bears and other wildlife depending upon seclusion from humans.

By law, the logging roads and illegal user-created roads on National Forests are supposed to be securely and effectively closed. Unfortunately, the Forest Service has interpreted this requirement to allow it to put a pile of dirt in front of the road and call it good. Road use on closed roads and illegal user-created roads is a pervasive and chronic problem and it is keeping these endangered grizzly bears on the brink of extinction.

This represents a major departure from prior management requirements and threatens to significantly degrade grizzly

The Forest Service is violating the ESA by arbitrarily dismissing the threat to grizzly bears and bull trout posed by roadbuilding.

See newspaper articles “Wandering grizzly leaves Bitterroot, returns to Idaho”

(https://helenair.com/news/state-and-regional/wandering-grizzly-leaves-bitterroot-returns-to-

idaho/article_9dfe0e30-b6da-5671-9f77-3f2eac4a9c6c.html#tracking-source=home-the-latest) and

"Grizzly bear captured Saturday at golf course near Stevensville"

(https://ravallirepublic.com/news/local/article_10f3f415-9cc5-5df4-91f8-2bc045650fdc.html).

We wrote in our comments:

ELK

The elimination of any requirements for habitat effectiveness, thermal cover, and elk security areas is somehow determined to have no significant adverse impacts on elk, which would require an Environmental Impact Statement (EIS) for this amendment. With the elimination of these standards/guidelines, the agency has no actual proxy to measure amendment impacts on elk. This is why there is

no actual analysis of how the amendment will impact elk. This analysis is not possible because the agency cannot define how many areas of the forest will exceed the 50% habitat effectiveness levels required for productive elk summer habitat. Measures of amendment impacts on elk security were not possible because security is not actually defined as per the current best science. Thus it cannot also be measured on the landscape, such as meeting the minimum 30% threshold to avoid significant impacts. As for thermal cover, the agency cites a 1998 paper by Cook and others that has been discredited by the 2013 Eastside Assessment that is also cited in the amendment. This assessment clearly notes that thermal cover may be important to wildlife, as does the 1985 Elk-Logging study by Lyon and others. Elimination of road density standards, elk security, and thermal cover requirements will clearly create significant reductions in elk habitat quality on this forest, a factor that was not acknowledged in the amendment draft EA, in violation of the NEPA.

Another factor that was clearly misrepresented by the agency in this amendment is the use of elk population levels as a measure of habitat quality on the forest, including security and elk vulnerability. It has been well documented that high elk population numbers indicate a lack of security, not good habitat on a forest. This is one of 2 actual "proxies" for elk security on a forest. The first is the percentage of the landscape that qualifies as security as per the Hillis Paradigm, or newer science by Lowrey et al.

(2019). That article discredited measures of elk security by Rangelack and others. We also note that the Proffitt article cited by the agency used the Hillis Paradigm to measure security. The second measure of adequate levels of security on public lands is total elk population numbers. When elk find security on private lands during the hunting season, it becomes very difficult to control population numbers. There is also another method to evaluate elk security, that that are population criteria per herd unit, especially bull/cow ratios. None of these methods for analysis of security were provided in the Amendment. In effect, there is no actual analysis as to how this amendment will affect elk.

We note that the Eastside Assessment (2013) cited in the Amendment clearly defines the need for thermal cover on winter ranges, as does the 1985 Elk-Logging study by Lyon and others. The agency's claim that the current best science has found no thermal cover benefits is clearly false, and is a false justification for removing this requirement in the amendment.

There was no actual analysis as to why the Guides for Elk Habitat Objectives will be removed as a requirement in the Amendment. Specifically, what is the problem with this document that it no longer is relevant to elk management, including winter ranges?

The amendment continues that existing claim in the Forest Plan that management of big game winter ranges for forage will improve elk habitat. Currently, there has been no actual documentation that logging and burning will improve elk forage on winter range. This lack of documentation includes any monitoring of the current forest plan program.

The amendment repeatedly claims that forage is the most critical need for elk management on the Bitterroot National Forest, without providing any actual reports or publications as to how this has been determined. The Eastside Assessment, as well as the Elk-Logging Study by Lyon and others (1985) document that elk require hiding cover, up to 66% for good cover, and management of cover on winter ranges. It is not clear specifically how the agency has determined that forage is limiting on the forest, and if so, why limiting motorized access through restriction of habitat effectiveness would not benefit elk. Somehow, more disturbances to elk will not affect their ability to forage.

Although the 2013 Eastside Assessment claims there is no science for a given level of hiding cover for elk, this is clearly not true. The 1985 Elk-Logging study reported, after 15 years of research, that good cover for elk is 66% or greater. And the Hillis Paradigm, as well as Lowrey et al. (2019) both found that cover is an important factor in elk

security. The lack of any requirements of hiding cover on the Bitterroot National Forest has yet to be supported in the Amendment.

The Amendment suggests that administrative vehicle use, which includes logging trucks, does not displace elk, but no references were cited. The Eastside Assessment (2013) clearly noted that 2-4 vehicle trips per 12 hours displaces elk.

The Amendment claims that a goal of this amendment is to keep elk on public lands in the hunting season. Yet all the factors that promote elk retention on the forest are being eliminated in the amendment. The actual reason elk retention on the forest in the fall hunting season will be maintained and/or improved was never provided.

The population criteria for hunting districts 204, 240, 250, 260, 261, 262, and 270 were not provided in the draft EA. This information is important to demonstrate how current management has affected elk. If management has not been effective, given the multiple forest plan exemptions for elk habitat, with only 40% of the 3rd order drainages meeting Forest Plan standards for elk habitat, it is important for the agency to fully evaluate how these exemptions have impacted elk. The agency did not do this analysis. Instead, they claimed that elk population num-

bers are up "dramatically," so that all these exemptions did not matter, or actually benefited elk. As we noted before, high population numbers indicates a lack of good elk habitat on a forest, not an abundance of high quality habitat. The current population levels of elk on this forest demonstrate that habitat measures have clearly failed, and need to be increased, not eliminated.

The Forest Service responded:

Monitoring of elk population status and habitat use is done by MTFWP. Survey results will be used to evaluate the effects of habitat management on elk behavior,a nd this information will inform motorized route designations as described in the EA.
Monitoring of elk population status and habitat use is done by MTFWP. Survey results will be used to evaluate the effects of habitat management on elk behavior,a nd this information will inform motorized route designations as described in the EA.
No reference can be found to a "2013 Eastside Assessment". New plan components are based on current scientific understanding of the ecological conditions required for the persistence of elk on the forest.

Seventeen Project-specific Forest Plan amendments regarding elk standards have been completed over the past 25 years, yet elk populations across the Forest have continued to increase during that time. The new plan components are based on the current scientific understanding of

the suite of ecological conditions required for the persistence of elk on the forest.

The relationship between high elk population numbers and poor habitat is unclear. However, the commentor is correct that using count data to guide travel management decisions may be inappropriate. Therefore FW-GDL-WLF- ELK-01 has been modified to emphasize the behavioral aspects of elk response to road desnity instead of population numbers.

The agency will also be exacerbating an ongoing problem of displacing elk to adjacent private lands in the hunting season due to a lack of security on public lands. The public interest is not being served by this amendment.

The same applies to the Forest Plan amendments to elk thermal over and habitat effectiveness. The Forest Service's failure to analyze any alternatives to the site specific amendment to the Forest Plan for elk thermal over and habitat effectiveness violates NEPA.

A Forest Plan amendment must comply with NEPA procedures. 36 C.F.R. §219.10(f) (1982). A Record of Decision is issued after an EIS is completed. 40 C.F.R. §1505.2 (2019).

In the Record of Decision, an agency must "[i]dentify all alternatives considered by the agency in reaching its decision . . . ." 40 C.F.R. §1505.2(a)(2)(2019). In an EIS,

agencies shall . . . [r]igorously explore and objectively evaluate all reasonable alternatives. . . .” 40 C.F.R. §1502.14(a)(2019); see also 40 C.F.R. §1502.1 (2019) (an EIS “shall inform decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment.)

The analysis of alternatives “is the heart of the environmental impact statement.”40 C.F.R. §1502.14(a)(2019). “The existence of a viable but unexamined alternative renders an environmental impact statement inadequate.” Alaska Wilderness Recreation & Tourism Ass'n v. Morrison, 67 F.3d 723, 729 (9th Cir.1995).

The Forest Plan amendments are in violation of NEPA regulations, the DDN fails to evaluate any reasonable alternatives to proposed site specific amendments to the old growth standard, elk habitat effectiveness and security cover. 40 C.F.R. §1502.14(a)(2019).

“[t]he existence of a viable but unexamined alternative renders an environmental impact statement inadequate.” Alaska Wilderness, 67 F.3d at 729.

A viable alternative for Forest Plan Amendment to the old growth standard, big game habitat effectiveness and security cover does exist. Changing the big game security standard and habitat effectiveness to come into compliance is not sufficient in and of itself; the standard must adequately conserve secure habitat.

Viable and reasonable alternative to site specific amendments to the Forest Plan standards for old growth and big

game security cover and habitat effectiveness would be an amendment that adequately conserves secure habitat, habitat effectiveness for big game and old growth dependent species in the planning area.

Such an amendment would comply with the 1982 NFMA regulations by using available science and consultation with State biologists to (a) ensure well-distributed habitat for elk throughout the planning area, and (b) address access and dispersal problems during the hunting season and (c) adequate habitat for old growth dependent species. See 36 C.F.R. §219.19 (1982).

The Forest Service's failure to disclose and analyze the cumulative effects of reasonably foreseeable site-specific Forest Plan amendments to exempt other projects from the old growth, big game security and habitat effectiveness violates NEPA.

"NEPA always requires that an environmental analysis for a single project consider the cumulative impacts of that project together with 'past, present and reasonably foreseeable future actions.'" Native Ecosystems Council v. Dombeck, 304 F.3d 886, 895 (9th Cir. 2002)(citing 40 C.F.R. §1508.7 (2019)). "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. §1508.7 (2019).

In Dombeck, the Ninth Circuit held that the Forest Service must analyze the cumulative effects of reasonably foreseeable Forest Plan amendments:

Here, the EA for the Darroch–Eagle sale does contain a section discussing the cumulative effects of some reasonably foreseeable future actions to be taken in the area around the sale. It does not, however, include the other Gallatin II road density amendments among these reasonably foreseeable future actions. As a result, the Forest Service does not analyze what, if any, environmental impacts the Darroch–Eagle road density amendment might have in combination with the contemplated road density amendments in the other Gallatin II sales. This omission violates NEPA.

Dombeck, 304 F.3d at 895-96.

The Ninth Circuit held that the reasonably foreseeable Forest Plan amendments "are proposed for the same national forest and will effect separate but additive changes to the density of roads within that geographic area." Id. Thus, "[b]ecause the amendments are reasonably foreseeable and may have cumulative impacts within the Gallatin National Forest, the Forest Service has a duty to consider them in its analysis of impacts within the Darroch–Eagle EA."

Furthermore, the Ninth Circuit expressly rejected the Forest Service's argument that the agency need not disclose all reasonably foreseeable Forest Plan amendments across the same National Forest:

REMEDY

Withdraw the DDN and write an EIS that fully complies with the law. The Amendments is in violation of NEPA,NFMA and the APA.

We wrote in our comments;

Please see the following article that ran in the Missoulian on March 11, 2019.

Fire study shows landscapes such as Bitterroot's Sapphire Range too hot, dry to restore trees

ROB CHANEY rchaney@missoulian.com Mar 11, 2019

Burned landscapes like this drainage in the Sapphire Mountains hasn't been able to grow new trees since the Valley Complex fire of 2000, due to lack of soil moisture, humidity and seed trees, as well as excess heat during the growing season. University of Montana students Erika Berglund and Lacey Hankin helped gather samples for a study showing tree stands are getting replaced by grass and shrubs after fire across the western United States due to climate change.

Courtesy Kim Davis

Fire-scarred forests like the Sapphire Range of the Bitterroot Valley may become grasslands because the growing seasons have become

too hot and dry, according to new research from the University of Montana.

“The drier aspects aren’t coming back, especially on north-facing slopes,” said Kim Davis, a UM landscape ecologist and lead inves- tigator on the study. “It’s not soil sterilization. Other vegetation like grasses are re-sprouting. It’s too warm. There’s not enough moisture for the trees.”

Davis worked with landscape ecologist Solomon Dobrowski, fire pa- leoecologist Philip Higuera, biologist Anna Sala and geoscientist Marco Maneta at UM along with colleagues at the U.S. Forest Ser- vice and University of Colorado-Boulder to produce the study, which was released Monday in the Proceedings of the National Academy of Sciences journal.

“What’s striking is if you asked scientists two decades ago how cli- mate warming would play out, this is what they expected we’d see,” Higuera said. “And now we’re start-

ing to see those predictions on the impact to ecosystems play out."

The study concentrated on regrowth of Ponderosa pine and Douglas fir seedlings in Montana, Idaho, Colorado, New Mexico,

Arizona and northern California. Field workers collected trees from 90 sites, including 40 in the northern Rocky Mountains, scattered within 33 wildfires that had occurred within the past 20 years.

"We did over 4,000 miles of road-tripping across the West, as well as lots of miles hiking and backpacking," Davis said. The survey crews brought back everything from dead seedlings to 4-inch-diameter tree rings; nearly 3,000 samples in total. Then they analyzed how long

each tree had been growing and what conditions had been when it sprouted.

Before the 1990s, the test sites had enough soil moisture, humidity and other factors to recruit new seedlings after forest fires, Do- browski said.

"There used to be enough variability in seasonal conditions that seedlings could make it across these fixed thresholds," Dobrowski said. "After the mid-'90s, those windows have been closing more of- ten. We're worried we'll lose these low-elevation forests to shrubs or grasslands. That's what the evidence points to."

After a fire, all kinds of grasses, shrubs and trees have a blank slate to recover. But trees, especially low-elevation species, need more soil moisture and humidity than their smaller plant cousins. Before the mid-90s, those good growing seasons rolled around every three to five years. The study shows such conditions have evaporated on virtually all sites since 2000.

"The six sites we looked at in the Bitterroots haven't been above the summer humidity threshold since 1997," Higuera said. "Soil moisture hasn't crossed the threshold since 2009."

The study overturns some common assumptions of post-fire recovery. Many historic analyses of mountain forests show the hillsides used to hold far fewer trees a century ago, and have become overstocked due to the efforts humans put at controlling fire in the woods. Higuera ex-

plained that some higher elevation forests are returning to their more sparse historical look due to increased fires.

"But at the lower fringes, those burn areas may transition to non- forest types," Higuera said, "especially where climate conditions at the end of this century are different than what we had in the early 20th Century."

The study also found that soil sterilization wasn't a factor in tree re- growth, even in the most severely burned areas. For example, the 2000 Sula Complex of fires stripped forest cover in the southern end of the Bitterroot Valley. While the lodgepole pine stands near Lost Trail Pass have recovered, the lower- elevation Ponderosa pine and Douglas firs haven't.

Another factor driving regeneration is the availability of surviving seed trees that can repopulate a burn zone. If one remains within 100 meters of the burned landscape, the area can at least start the process of reseeding. Unfortunately, the trend toward high-severity fires has reduced the once-common mosaic patterns that left some undamaged groves mixed into the burned areas.

Higuera said he hoped land managers could use small or prescribed fires to make landscapes more resilient, as well as restructure tree- planting efforts to boost the chances of heavily burned places.

Rob Chaney

Natural Resources & Environment Reporter

Natural Resources Reporter for The Missoulian.

The NFMA requires in the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research find- ings, the FS must disclose the significant trend in post-fire regeneration failure. The forest has already experienced considerable difficulty restocking on areas that have been subjected to prescribed fire, clear-cut logging, post- fire salvage logging and other even-aged management "systems."

NFMA (1982) regulation 36CFR 219.27(C)(3) implements the NFMA statute, which requires restocking in five years.

Forest managers must analyze and disclose the fact that the BNF can no longer "insure that timber will be har-

vested from the National Forest system lands only where...there is assurance that such lands can be re-stocked within five years of harvest?" (NFMA§6(g)(3)(E)(ii)).

The project goals and expectations are not consistent with NFMA's "adequate restocking" requirement. Scientific research can no longer be ignored.

"At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed these thresholds, such that conditions have become increasingly unsuitable for regenera- tion. High fire severity and low seed availability further reduced the probability of post-fire regeneration. Together, our results demonstrate that climate change combined with high severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States." Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration, PNAS (2018), Kimberley T. Davis, et al. (Please, find attached)

Forests are already experiencing emissions-driven deforestation on both the post-fire and post-logging acreage. Areas where the cumula- tive effects of wildfire, followed by salvage logging on the same piece of ground are error upon error, with decades of a routine that can rightfully be described as willful ignorance and coverup.

"In the US Rocky Mountains, we documented a significant trend of post-fire tree regeneration, even over the relatively short period of 23 years covered in this analysis. Our findings are consistent with the expectation of reduced resilience of forest ecosystems to the combined impacts of climate warming and wildfire activity. Our results suggest that predicted shifts from forest to non-forested vegetation." Evidence for declining forest resilience to wildfires under climate change, Ecology Letters, (2018) 21: 243–252, Stevens-Ru- mens et al. (2018). (Please find attached)

The Forest Plan is based on assumptions largely drawn from our past that no longer hold true. These assumptions, made decades ago, must be challenged, and amended, where overwhelming evidence demon- strates a change of course is critical. It is time to take a step back,

as- sess the present and future and make the necessary adjustments, all in full public disclosure to the Congress and the American people. Many acres of (conifers) In many areas, conifers haven't shown "re- silience" enough to spring back from disturbance. Regeneration is already a big problem. (Emphasis added).

Both RPA and NFMA mandate long-range planning which impose numerous limitations on commodity production, including grazing, timber harvesting practices and the amount of timber sold annually.

These long-range plans are based on assumptions, which are based on data, expert opinion, public participation and other factors that all, well almost all, view from a historical perspective. Assumptions that drove forest planning guidance decades ago, when climate risk was not known as it is today, are obsolete today.

Present and future climate risk realities demand new assumptions and new guidance.

A proper reexamination of the assumptions relating to resilience and sustainability contained in the Forest Plan is necessary. Scientific research supporting our comments focus on important data and analysis. A full discussion

and disclosure of the following is required: 1) trends in wildfires, insect activity and tree mortality, 2) past regeneration success/failure in the BNF, and 3) climate-risk science – some of which is cited below. Our comments, and supporting scientific re- search clearly "demonstrates connection between prior specific written comments on the particu- lar proposed project or activity and the content of the objection..."

The project is in violation of NEPA, NFMA, the Forest Plan and the APA.

Sec. 6. of the National Forest Management Act states:

(g) As soon as practicable, ... the Secretary shall ... promulgate regulations, under the principles of the Multiple-Use, Sustained-Yield Act of 1960...

The regulations shall include, but not be limited to-

(3) specifying guidelines for land management plans developed to achieve the goals of the Program which-

(E) insure that timber will be harvested from National Forest System lands only where-

(i) soil, slope, or other watershed conditions will not be irreversibly damaged;

NFMA regulations at 36 C.F.R. § 219.27 (Management requirements) state:

(a) Resource protection. All management prescriptions shall—

(1) Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land;

(b) Vegetative manipulation. Management prescriptions that involve vegetative manipulation of tree cover for any purpose shall--

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources;

The project-level, and programmatic-level (Forest Plan) fail to publicly disclose the current and future impacts of climate risk to our national forests. NEPA requires cumulative effects analysis at the programmatic level, and at the project-level. Please assess and disclose all risks associated with additional vegetative-manipulation (slash and burn) units in currently defined old growth in the BNF in the proper climate-risk context/scenario under the proposed amendmentss to the Forest Plan.

In the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research findings, NEPA analysis and disclosure must address the well-documented trend in post-fire regeneration failure. The BNF has already experienced difficulty restocking on areas that burned in the 1988 wildfire. NFMA (1982) regulation 36 CFR 219.27(c)(3) implements the NFMA statute, which requires adequate restocking in five years.

Given the forest's poor history of restocking success and its failure to employ the best available science, the adequacy of the site-specific and programmatic NEPA/ NFMA process begs for further analysis and disclosure of the reality of worsening climate conditions which threaten – directly and cumulatively – to turn forest into non-forest- ed vegetation, or worse.

The Forest Plan is based on assumptions largely drawn from our past. These assumptions must be challenged, and amended, where overwhelming evidence demonstrates a change of course is critically important. It is time to take a step back, assess the future and make the necessary adjustments, all in full public disclosure to the Congress and the American people.

Please acknowledge the likelihood that "...high seedling and sapling mortality rates due to water stress, competing vegetation, and repeat fires that burn young stands," which will likely lead to a dramatic increase in non- forest land acres. Many acres of (conifers) trees already fail to regenerate. (Emphasis added). A map of these areas is required. In many areas, conifers haven't shown "resilience" enough to spring back from disturbance.

Looking to the Future and Learning from the Past in our Na- tional Forests: Posted by Randy Johnson, U.S. Forest Service Research and Development Program, on November 1, 2016 at 11:00 AM http://blogs.usda.gov/2016/11/01/looking-to-the- future-and-learning-from-the-past-in-our-national-forests/

Excerpt:

"Forests are changing in ways they've never ex- perienced before because today's growing conditions are different from anything in the past. The climate is changing at an unprecedented rate, exotic diseases and pests are present, and landscapes are fragmented by human ac- tivity often occurring at the same time and place.

When replanting a forest after disturbances, does it make sense to try to reestablish what was there before? Or, should we find re-plant material that might be more appropriate to current and future conditions of a changing environment?

Restoration efforts on U.S. Forest Service managed lands call for the use of locally adapted and appropriate native seed sources. The science-based process for selecting these seeds varies, but in the past, managers based decisions on the assumption that present site conditions are similar to those of the past."

"This may no longer be the case."
The selected scientific research presented above is only a sampling of the growing body of evidence that supports the need to disclose the consequences of the proposed action in a proper context – a hotter forest environment, with more frequent drought cycles. This evidence brings into question the Purpose and Need for the project. It also requires the FS to reconsider the assumptions, goals and expected desired future condition expressed in the existing Forest Plan. Plan expectations must be amended at

the programmatic level before proceeding with proposed project-level action(s). According to best available science, implementing the project will most likely accomplish the opposite of the de- sired future condition. We can adjust as we monitor and find out more. However, to willfully ignore what we do know and fail to disclose it to the public is a serious breach of public trust and an unconscionable act. Climate risk is upon us. A viable alternative to the proposal is not only reasonable and prudent, but it is the right thing to do.

The proposed amendmentss will be in violation of NEPA, NFMA, the Clean Water Act, the ESA and the APA if the prosed amendmentss adversely affect biological diversity and it is not following the best available.

The NEPA requires a "hard look" at climate issues, including cumulative effects of the "treatments" in the proposed project when added to the heat, drought, wind and other impacts associated with in- creased climate risk including the proposed amendmentss. Regeneration/Re-

stocking failure following wildfire, prescribed fire and/or mechanical tree-killing has not been analyzed or disclosed. There is a considerable body of science that suggests that regeneration following fire is increasingly problematic.

NEPA requires disclosure of impact on "the human environment." Climate risk presents important adverse impacts on cultural, economic, environmental, and social aspects of the human environment. – people, jobs, and the economy – adjacent to and near the BNF. "Challenges in predicting responses of individual tree species to climate are a result of species competing under a never-before-seen climate regime – one forests may not have experienced before either.

In an uncertain future of rapid change and abrupt, unforeseen transitions, adjustments in management approaches will be necessary and some actions will fail. However, it is increasingly evident that the greatest risk is posed by continuing to implement strategies inconsistent with and not informed by current understanding of our novel future....

Achievable future conditions as a framework for guiding forest conservation and management, Forest Ecology and Management 360 (2016) 80–96, S.W. Golladay et al. (Please, find attached)

Stands are at risk of going from forest to non-forest, even without the added risk of "management" that appears would be increases in the BNF. The District Court of Montana ruled in Case 4:17-cv-00030- BMM that and in an additional case that the Federal government did have to evaluate the climate change impacts of the federal government coal program. Please find the orders attached.

In March 2019, U.S. District Judge Rudolph Contreras in Washington, D.C., ruled that when the U.S. Bureau of Land Management (BLM) auctions public lands for oil and gas leasing, officials must consider emissions from past, present and foreseeable future oil and gas leases nationwide. The case was brought by WildEarth Guardians and Physicians for Social Responsibility.

In March of 2018 the Federal District Court of Montana found the Miles City (Montana) and Buffalo (Wyoming) Field Office's Resource Management Plans unlawfully overlooked climate impacts of coal mining and oil and gas

drilling. The case was brought by Western Organization of Resource Councils, Mon- tana Environmental Information Center, Powder River Basin

Resource Council, Northern Plains Resource Council, the Sier- ra Club, and the Natural Resources Defense Council.

The proposed amendments will be in violation of NEPA, NFMA, the APA, the ESA if the BNF does not examine the impacts of the proposed amendments on climate change. The proposed amendments could result in the eliminate of many old growth forests in the BNF. Forests absorb carbon and old growth forest absorb the most carbon. The proposed amendments could result in more soil that is destroyed in the BNF. Soils are carbon sinks.

Please include an alternative that keeps the current definition of old growth forests in the Forest Plan. Please include an alternative that uses the complete definition of old growth forest based on the best available science.

Sec. 6. of the National Forest Management Act states:

(g) As soon as practicable, ... the Secretary shall ... promulgate regulations, under the principles of the Multiple-Use, Sustained-Yield Act of 1960...

The regulations shall include, but not be limited to-

(3) specifying guidelines for land management plans developed to achieve the goals of the Program which-

(E) insure that timber will be harvested from National Forest System lands only where-

(i) soil, slope, or other watershed conditions will not be irreversibly damaged;

NFMA regulations at 36 C.F.R. § 219.27 (Management requirements) state:

(a) Resource protection. All management prescriptions shall—

(1) Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land;

(b) Vegetative manipulation. Management prescriptions that involve vegetative manipulation of tree cover for any purpose shall--

(5) Avoid permanent impairment of site productivity and ensure conservation of soil and water resources;

In the face of increasing climate risk, growing impacts of wildfire and insect activity, plus scientific research findings, NEPA analysis and disclosure must address the well-documented trend in post-fire regeneration failure. The project has already experienced difficulty restocking on areas that burned in the 1988 wildfire. NFMA (1982) regulation 36 CFR 219.27(c)(3) implements the NFMA statute, which requires adequate restocking in five years.

Given the forest's poor history of restocking success and its failure to employ the best available science, the adequacy of the site-specific and programmatic NEPA/ NFMA process begs for further analysis and disclosure of the reality of worsening climate conditions which threaten – directly and cumulatively – to turn forest into non-forest- ed vegetation, or worse. The desired future condition described in the Purpose and Need, or in the Forest Plan is not deforestation.

The Forest Service responded:

The amendment does not propose any ground-disturbing treatments that would require restocking. Any future site-

specific projects will consider climate and the ability of forests to successfully regenerate.
The amendment does not propose any ground-disturbing treatments that would require restocking. Any future site-specific projects will consider climate and the ability of forests to successfully regenerate.

This research supports the treatments that the amendment would allow to make old growth stands more resilient to wildfire by reducing ladder fuels.

The amendment does not propose any ground-disturbing treatments that would require analysis in reforestation, insects and disease and wildfire.

The amendment does not meet the purpose and need of the proposal. Please see the attached paper by Baker et al. 2023. This landmark study found a pattern of "Falsification of the Scientific Record" in government-funded wildfire studies.

The DDN is in violation of NEPA, NFMA, and the APA.

REMEDY

Withdraw the DDN and FONSI and write an EIS that fully complies with the law and the best available science.

We wrote in our comments:

Water quality

Please disclose the baseline condition, and expected sedimentation during and after the proposed amendments, for all streams in the BNF.

We request a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, increases in peak flow, channel stability, risk of rain-on-snow events, and increases in stream water temperature. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities. Where livestock are permitted to graze, we ask that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, stream bank stability and subsequent sedimentation.

How will the proposed amendments effect bull trout and cutthroat throat and their habitat?

The Forest Service responded:

The amendment will have no effect on bull trout or water quality.

The amendments is in violation of NEPA, NFMA, the Clean Water Act and the ESA.

The Forest Service refused the analyze the effect of the amendments on water quality and bull trout because it is not a site specific project even though the amendments will allow more logging and in bull trout watersheds. Please find Frissell attached.

Remedy

Choose the No Action Alternative or withdraw the draft decision and write an EIS that fully complies with the law.

Sincerely yours,
Michael Garrity (Lead Objector)
Ecosystems Council
P.O. Box 505
Helena, Montana 59624
406-459-5936

And for

Sara Johnson
Native Ecosystems Council

P.O. Box 125
Willow Creek, MT 59760

And for

Jeff Juel
Montana Policy Director
Friends of the Clearwater
509-688-5956
jeffjuel@wildrockies.org

And for

Jim Miller, President
The Friends of the Bitterroot
Hamilton, MT 59840
millerfobmt@gmail.com

And for

Adam Rissien
Rewilding Manager
WildEarth Guardians
406-370-4147
www.wildearthguardian.org
arissien@wildearthguardians.org

And for

Steve Kelly
Director Council on Wildlife and Fish
(Formally Montana Ecosystem Defense Council)
P.O. Box 4641
Bozeman, MT 59772

And for

Kristine Akland

CENTER FOR BIOLOGICAL DIVERSITY

P.O. Box 7274

Missoula, MT 59807