Data Submitted (UTC 11): 3/8/2021 11:00:00 AM
First name: Michael
Last name: Garrity
Organization: Alliance For The Wild Rockies
Title: Director
Comments: Suggested Remedies to Resolve the Objection:

We recommend that the [ldquo]No Action Alternative[rdquo] be selected. We have also made specific recommendations after each problem.

NOTICE IS HEREBY GIVEN that, pursuant to 36 CFR Part 218, AWR objects to the Draft Decision Notice (DDN) and Finding of No Significant Impact (FONSI) with the legal notice published on January 2, 2021, in- cluding the Responsible Official[rsquo]s adoption of Alternative 2.

AWR is objecting to this project on the grounds that im- plementation of the Selected Alternative is not in accor- dance with the laws governing management of the nation- al forests such as the FLPMA, ESA, NEPA, NFMA, the Helena National Forest (HNF) Forest Plan 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 upset- ting the wildlife habitat, ecosystem and human communi- ties. Our objections are detailed below.

If the project is approved as proposed, individuals and members of the above-mentioned groups would be direct- ly and significantly affected by the logging and associated activities. Objectors are conservation organi- zations working to ensure protection of biological diversity and ecosys- tem integrity in the Wild Rockies bioregion (in- cluding the HNF). The individuals and members use the project area for recreation and other forest related activi- ties. The selected alternative would also further de- grade the water quality, wildlife and fish habitat. These activities, if implemented, would adversely impact and ir- reparably harm the natural qualities of the Project Area, the surrounding area, and would further de- grade the wa- tersheds and wildlife habitat.

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

GRIZZLY BEAR

We wrote in our comments: Grizzly Bear

Please see the attached grizzly bear connectivity map.

Grizzly Bear Connectivity Maps: Data Sources and De- scriptions

The Randomized Shortest Path (RSP) raster delineates po- tential dispersal paths for male-mediated gene flow be- tween grizzly bear (Ursus arctos) populations in the Greater Yellowstone Ecosystem (GYE) and the Northern Continen- tal Divide Ecosystem (NCDE).

Feature Layer by mattgisonline

(https://services3.arcgis.com/mtA9zsG1MSKLQNza/ar- cgis/rest/services/GYE_to_NCDE_Grizzly_Bear_Corridors/FeatureServer) Description

The Randomized Shortest Path (RSP) raster delineates po- tential dispersal paths for male-mediated gene flow between grizzly bear (Ursus arctos) populations in the Greater Yellowstone Ecosystem (GYE) and the Northern Continen- tal Divide Ecosystem (NCDE). A RSP algorithm was used to estimate the average number of net passages for all grid cells at a spatial resolution of 300 m in the study region which spans parts of Montana, Idaho, and Wyoming. RSP rasters identify potential movement paths for 3 levels of random deviation determined by the parameter [Theta] (i.e., [Theta] = 0.01, 0.001, and 0.0001) for bears moving from an origin to a destination node. Lower values of [Theta] result in greater ex- ploration and more random deviation around the shortest path ([Theta] = 0 equivalent to pure random walk), whereas larg- er values approach the equivalent of a least-cost path. Broad-scale concordance between model predictions was found for paths originating in the NCDE and those originat- ing in the GYE for all 3 levels of movement exploration. The resulting RSP rasters provide evidence that landscape features concentrate movement paths into corridors (e.g., because of anthropogenic influence), and delineate paths that typically follow neighboring mountain ranges. Movement paths that converge at junctions between several ranges may serve as pivotal steppingstones for grizzly bear movement and successful dispersal.

Please incorporate this into your analysis.

Page 141 of the page the EA states the Middleman Project [ldquo]may affect and is likely to adversely affect grizzly bears.[rdquo] The Interagency Grizzly Bear Guidelines (IGBC 1986) document directs the FS to manage for [ldquo]multiple land use benefits[rdquo] to the extent that these uses are compatible with grizzly recovery.

The Helena-Lewis and Clark National Forest has occupied- grizzly bear habitat thoughout. Management must

focus on grizzly bear habitat maintenance, improvement and mini- mization of grizzly-human- conflict. Since grizzly are listed as threatened under the Endangered Species Act, manage- ment decisions shall favor the needs of the grizzly bear when grizzly habitat and other land use values compete.

The DROD and FEIS for the 2020 Forest Plan do not dis- close if adverse project or cumulative impacts are consis- tent with the requirement to prioritize the needs of the griz- zly bear for the applicable Management Situations.

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

Logging and/or fire management activities which will ad- versely affect grizzly bear populations and/or their habitat will not be permitted; adverse population effects are popu- lation reductions and/or grizzly positive conditions; adverse habitat effects are reduction in habitat quantity and/or qual- ity. 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. Oth- erwise, grizzly bear mortality risks will be high as bears at- tempt to move across highly roaded landscapes to another security area. There needs to be direction regarding existing road densities located outside of and be- tween security ar- eas.

Grizzly bears are winter-sleepers rather than true hiberna- tors. If high density motorized routes are known to disturb, displace, habituate, and raise mortalities among grizzlies in spring, summer, and fall, there[rsquo]s no logical, or scientific reason to believe they don[rsquo]t do the same to sleeping bears in winter.

The Revised Plan[rsquo]s desired condition for patches which in- cludes a range of larger opening sizes may result in adverse effects if lack of cover leads to under use of foraging habi- tat or increased risk of human-grizzly bear conflicts causing mortality of a grizzly bear. Openings created by timber har- vest, depending on site conditions, may retain features that interrupt the line of sight and provide cover for bears (J. Anderson 03/12/2012 pers. comm.).

The EA fails to show that the openings to be newly created by the project don[rsquo]t exceed levels of current incidental take.

The current management strategy allows [ldquo]temporary[rdquo] re- ductions in Core and [ldquo]temporary[rdquo] increases in road density as if the habitat would then get reprieve from such [ldquo]tempo- rary[rdquo] adverse effects. However, the FS recognizes no gen- uine limitations on how much, how often and for how long

these [ldquo]temporary[rdquo] 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 that reduce Security Core for half a decade.

Moreover, excusing logging roads from limits on Total Mo- torized Route Density even though they have not been de- commissioned, have not been removed from the road sys- tem, and are instead being [ldquo]stored[rdquo] for future logging which also makes them more vulnerable to continued use as trails. (Hammer, 2016.)

Within these comments, we incorporate AWR[rsquo]s February 12, 2018 Objection to the draft Record of Decision for the- Amendments to the Forest Plans of the Lolo, Kootenai, and Helena-Lewis and Clark National Forests concerning habitat management direction for the Northern Continental Di- vide Ecosystem grizzly bear population in the North Big Belts grizzly bear analysis unit. This is necessary because the 2020 Forest Plan will be implementing the forest plan as amended by those Amendments (here- in after, [ldquo]Grizzly Amendments[rdquo] or [ldquo]Grizzly Amendment[rdquo]) and sub- sequent to our Objection, the Forest Service (FS) did not provide adequate relief to rectify the deficiencies in law, policy and regulation our Objection identified.

Please note that AWR[rsquo]s Objection to the Grizzly Amendments itself incorporated other objections and comments, and so those are likewise incorporated herein. Those in- clude the objections by Swan View Coalition (SVC), Friends of the Wild Swan (FOWS), and Brian Peck found at: http://www.swanview.org/reports/Brian_Peck_Forest_- Plan_Objection.pdf, http://www.swanview.org/reports/FOWS_Forest_Plan_Ob-jection.pdf, That was also an Objection to the Flathead National Forest Land and Resource Management Plan and the Flathead National Forest Species of Conservation Concern determination and list, and to the degree the science, law, and policy we discuss Project. http://www.swanview.org/reports/SVC_Forest_Plan_Ob-jection.pdf and previous comments and other communica- tions from AWR, SVC, FOWS, and Brian Peck concerning the Grizzly Amendments. Four your convenience, the SVCThis Forest Plan amendment for grizzly bears abandons a longstanding Forest Service commitment to limit road development in key grizzly bear habitat in the Helena National Forest and to limit human uses of grizzly bear secure habitat. The Forest Service and FWS have sought to dismiss the impact of this new management direction by asserting that the Forest Service will maintain the habitat conditions, but the agen- cies ignored that the amendment does not constrain the construc- tion of new road mileage as long as the Service takes minimal measures to block or obscure the entrances to the new roads even though the federal district court just ruled that Forest Service road closures are not effective. Please see the attached order for case 9:18-cv-00067-DWM.

The Forest Service responded: That our comments were beyond the scope of their analysis. And, [ldquo]Please see the Linkage Zone Consid- erations section under Grizzly Bear, in the EA, which references the relevant randomized short path study for this area, Peck et al. 2017[rdquo] Our previous comments included a map illustrating the impor- tance of the project area for grizzly bear connectivity between the NCDE and GYE populations. Ensuring these bears have ad- equate security as they disperse away from their core habitat is absolutely essential for their full recovery. Our map illustrates portions of the planning area provide high value movement pathways for grizzly bears, precisely where the agency proposes numerous miles of temporary roads

and several treatment units. The Middleman Project area falls within Management Zone 2 defined in the Northern Continental Divide Ecosystem Grizzly Bear Conservation Strategy. [ldquo]Zone 2 would be managed to al- low grizzlies to move between the Northern Continental Divide Ecosystem and other large wildland areas (the Greater Yellow- stone and Bitterroot ecosystems).[rdquo] 2021 Middleman Non-Big Game Report at 37. The Forest Service recognizes the planning area serves as a grizzly bear linkage zone. 2021 Middleman EA at 156. Further the agency explains that, [ldquo]the Middleman Project overlaps with the North Big Belts grizzly bear analysis unit.The Middle Big Belts grizzly bear analysis unit is adjacent to the southern boundary of the project area but was not considered during analysis.[rdquo] Id. at 157. It is unclear how the Forest Service can consider the cumulative effects of the selected alternative in the context of connectivity without incorporating the conditions in the adjacent Middle Big Belts BMU.

As it stands, the Northern Big Belts BMU contains only 35% of secure grizzly bear habitat, and the selected alternative will re- duce this amount to 34%. Middleman EA at 42, 44. The standard for providing adequate habitat security within the primary con- servation area is 69%. The Forest Service failed to analyze how the existing 35% secure core and the resulting decrease under the selected alternative affects the ability of grizzly bears to utilize the planning area, and adjacent BMUs, as dispersal corri- dors. The agency fails to disclose the percent of secure core nec- essary to ensure grizzly bear connectivity, or provide evidence that bears need less secure core habitat than 69% to effectively utilize an area as a dispersal corridor.

Furthermore, the Forest Service failed to incorporate unautho- rized roads and illegal motorized use within its analysis of griz- zly bear security or disclose how they affect connectivity, an is- sue we raised in our previous comments. Rather than include the necessary analysis, the agency omits unauthorized roads in its grizzly bear secure core calculations, while asserting [ldquo][b]ecause all roads are considered the same (whether open or restricted) for calculating secure habitat for grizzly bears, illegal motorized use of restricted roads does not reduce secure habitat.[rdquo] 2021 Middleman EA Non-Big Game Report at 47. We agree that all roads, system and unauthorized, should have been included in secure habitat calculations, but the agency omitted them per the following secure core definition: [ldquo][w]e have defined secure habitat as areas larger than 2,500 acres at least 500 meters from motorized routes open to the public during the non-denning sea- son (April[ndash]November).[rdquo] 2021 Middleman EA at 158, emphasis added. We object to the use of this secure core definition as even closed, stored and remnants of decommissioned roads can re- duce secure habitat for grizzly bears, a fact we explained in our previous comments. Further, the Forest Service omitted numer- ous roads in its secure habitat calculations, roads it displays as [ldquo]other[rdquo] when disclosing that there are 307 miles of existing system roads in the planning area. 2021 Middleman EA Transporta- tion Report at 3, Figure 1. Please note, the Forest Service road definitions do not include [ldquo]other,[rdquo] and we consider such roads as unauthorized. 36 C.F.R. 212.1. The Forest Service analysis fails to address this issue in any meaningful way, or answer basic questions such as: How many miles of "other" roads are in the planning area? What is their history and current status? What will happen to these roads under the selected alternative? How much illegal motorized use occurs on these "other" roads? How do these roads affect grizzly bear secure habitat and the use of the planning area as a dispersal corridor? The failure to answer these questions is even more glaring when considering the fact that the 2021 Middleman EA lacks any dedicated analysis of the transportation system, and the transportation report includes [ldquo][m]iles of non-system road not used as haul routes and identi- fied as not needed in the 2007 Travel Plan" as a measure of the resource indicator labeled, [ldquo]Roads to be Obliterated not associ- ated with timber harvest.[rdquo] 2021 Middleman EA, Transportation Report at 8, Table 5. It is important to note here, only 0.3 miles of system road would be recontoured to its original slope, but no unauthorized roads would be obliterated. 2021 Middleman Draft DN at 5. The Forest Service should have disclosed the number of unauthorized roads in the planning area that would be re- tained post-project completion and included them in its grizzly bear secure core calculations. Conversely, the agency could omit those

unauthorized roads only if it proposed obliterating them through full recontouring, especially for those roads that experi- ence illegal motorized use, are still hydrologically connected, or at high-risk of burning during a wildfire that would expose the road bed.

In addition, the grizzly bear secure core definition contradicts the agency[rsquo]s assertion that all roads are considered the same, and therefore, it is arbitrary and capricious for the Forest Service to claim illegal motorized use does not reduce secure habitat since the agency failed to analyze the issue. In fact, the Forest Service attempts to dismiss including illegal motorized use in its analy- sis by asserting the [ldquo]effects of illegal motorized access would not result in a change in the project area[rsquo]s access conditions be- fore, during, or after implementation as such use was not autho- rized, carried out, or funded by the Forest.[rdquo] 2021 Middleman EA Non big-game report at 47. Such a response does not address our comments and side-steps the issue. Illegal motorized use func- tionally changes closed roads to open thereby reducing habitat security. The agency cannot sidestep its NEPA obligations by claiming it did not authorize, carry out or fund illegal motorized use, especially when it has management authority to enforce road closures or take actions that preclude illegal use, such as recontouring the road entrances or fully removing the road. The Forest Service provides an additional rationale, perhaps recog- nizing the fallacy of its prior assertion, by claiming the effects of illegal use would be temporary: [ldquo]illegal motorized access would most likely result in temporary effects to grizzly bears as op- posed to a permanent change in motorized access conditions be- cause the Forest corrects the situation as soon as they are able.[rdquo] 2021 Middleman EA Non-Big Game Report at 47. The agency cannot claim that the effects are temporary without evidence or supporting analysis, as such conclusory remarks are arbitrary and capricious. Fundamentally, the agency needs to define what it considers temporary, and demonstrate that it can effectively correct the situation. The current analysis fails in this regard.

Finally, the Forest Service claims that illegal motorized use is not an [ldquo]action,[rdquo] as defined under the ESA Section 7 Consulta- tion Handbook, and as such it need not analyze the issue as an effect of the modified proposed action. 2021 Middleman EA Non-Big Game Report at 46-47. Unauthorized motorized use stems from a failure by the Forest Service to remove unautho- rized roads and trails, or to fully remove decommissioned roads, or to effectively block closed roads, or to enforce travel restric- tions. The failure to act is itself an action and as such, the Sec. 7 consultation requirements must extend to illegal road use and the resulting harm to grizzly bear habitat security and connectiv- ity. This issue must be analyzed in an EIS. Currently the project is in violation of NFMA, NEPA, the Forest Plan, the APA and the ESA.

REMEDY

Suggested Resolution: Address the aforementioned analysis de- ficiencies in an EIS and include a proposed action that removes enough roads from the ground to achieve a 69% grizzly bear se- cure core and that precludes temporary road construction in the grizzly bear linkage area.

Inappropriate Reliance on Best Management Practices and De- sign Features

Our comments asked the agency to properly demonstrate the ef- ficacy of BMPs and design features in its

analysis by providing a record of compliance with state best management practices re- garding stream sedimentation from ground-disturbing manage- ment activities. Our comment stems from the fact that the Forest Service cannot rely on best management practices BMPs or de- sign features as a rationale for omitting proper analysis or for as- suming the selected alternative would not result in significant environmental impacts. The need for such analysis is crucial given that [ldquo][t]here are over 150 miles of roads and trails within riparian areas in the Middleman project area.[rdquo] 2021 Middleman EA at 192.

The Forest Service responded:

There are multiple project design features to address potential road and vegetation treatment erosion and sedimentation concerns. The design features are listed in Appendix B and effectiveness of BMP[rsquo]s are described in the hydrology section of the EA.

While the state BMPs and the agency[rsquo]s proposed design features may reduce sedimentation, the Forest Service cannot assume 100 or even 90 percent proper implementation of those BMPs and design features, or that they will be 100 or even 90 percent effective. Yet, it appears that the analysis assumes just that: [ldquo][t]his analysis assumes that by adhering to the design features and applicable best management practices, treatment activities would not impair hydrologic function of wetlands or riparian ar- eas.[rdquo] 2021 Middleman EA Aquatics Report at 10. Further, the Forest Service acknowledges that [ldquo][u]nder existing conditions, anthropogenic erosion and sedimentation to streams in the project area exceed desired conditions due to past and ongoing road use and deterioration, livestock grazing, channel alteration, and mining activities directly affecting quality of aquatic habitat.[rdquo] Id. at 21. Even with BMPs and design features, the Middleman Project fails to ensure long-term sediment reduc- tions: [ldquo][a]ny post-project sediment reductions from road improvements would be expected to last from three to seven or more years following treatment.[rdquo] Id. at 12. It is apparent that the Forest Ser- vice cannot rely on sedimentation reductions from BMPs and design features past seven years without demonstrating the abili- ty to maintain those improvements. In order to improve riparian habitat and overall watershed conditions, the Forest Service should have identified roads for storage or decommissioning necessary to preclude future stream sedimentation.

The Forest Service used the Water Erosion Prediction Project: Road model in four different scenarios to predict potential sedi- mentation. Id. at 11. Yet, the Forest Service should have includ- ed in each scenario a model run that excluded BMPs and design features in order to demonstrate the actual potential sedimenta- tion. This is even more important considering there are seven imparied streams in the planning area. 2021 Middleman EA at. The Forest Service fails to disclose if any of those stream seg- ments contain a road-specific Total Daily Maximum Load for sediment, and if so, whether or not the project activities will ex- ceed those limits. Given the number of streams in Montana that still need a TMDL, it is likely these streams do not have estab- lished sediment TMDLs, which makes it all the more important for the agency to ensure current levels do not increase and vio- late the Clean Water Act (CWA). As stated in our past com- ments, we object to the Forest Service assuming that incorporat- ing BMPs and design features in its decisions equates to compli- ance with the CWA without providing evidence in the Middle- man EA. The agency cannot tier to non-NEPA documents to demonstrate compliance with NEPA or the CWA. We recognize and support the Forest Service[rsquo]s design feature that directs:[ldquo][m]onitoring will occur during and after project work to determine whether applied best management practices associat- ed with treatment units and roads are effective in minimizing sediment delivery to streams.[rdquo] Middleman Draft DN at 67, Table

1. Yet, we question why past monitoring results from similar Forest Service projects were not included in the Middleman EA, unless this is the first time the agency proposes to conduct project-level monitoring for BMP and design feature effective- ness during and after project work? Absent this level of evi- dence, the Helena-Lewis & Clark NF should consider the Forest Service[rsquo]s own audits and technical reports we discuss below.

The Forest Service tracks the rate of implementation and the rel- ative effectiveness of BMPs from in-house audits. This information is summarized in the National BMP Monitoring Summary Report with the most recent data being the fiscal years 2013-2014. Carlson et al. 2015. The rating categories for im- plementation are [ldquo]fully implemented,[rdquo] [ldquo]mostly implemented,[rdquo] [ldquo]marginally implemented,[rdquo] [ldquo]not implemented,[rdquo] and [ldquo]no BMPs.[rdquo] [ldquo]No BMPs[rdquo] represents a failure to consider BMPs in the plan- ning process. More than a hundred evaluations on roads were conducted in FY2014. Of these evaluations, only about one third of the road BMPs were found to be [ldquo]fully implemented.[rdquo] Id. at 12.

The monitoring audit also rated the relative effectiveness of the BMP. The rating categories for effectiveness are [ldquo]effective,[rdquo] [ldquo]mostly effective,[rdquo] [ldquo]marginally effective,[rdquo] and [ldquo]not effective.[rdquo] [ldquo]Effective[rdquo] indicates no adverse impacts to water from project or activities were evident. When treated roads were evaluated for effectiveness, almost half of the road BMPs were scored as either [ldquo]marginally effective[rdquo] or [ldquo]not effective.[rdquo] Id. at 13.

Further, a technical report by the Forest Service entitled, [ldquo]Effec- tiveness of Best Management Practices that Have Application to Forest Roads: A Literature Synthesis,[rdquo] summarized research and monitoring on the effectiveness of different BMP treatments for road construction, presence and use. Edwards et al. 2016. The report found that while several studies have concluded that some road BMPs are effective at reducing delivery of sediment to streams, the degree of each treatment has not been rigorously evaluated. Few road BMPs have been evaluated under a variety of conditions, and much more research is needed to determine the site-specific suitability of different BMPs (Edwards et al. 2016, also see Anderson et al. 2011). Edwards et al. (2016) cites several reasons for why BMPs may not be as effective as com- monly thought. Most watershed-scale studies are short-term and do not account for variation over time, sediment measurements taken at the mouth of a watershed do not account for in-channel sediment storage and lag times, and it is impossible to measure the impact of individual BMPs when taken at the watershed scale. When individual BMPs are examined there is rarely

broad-scale testing in different geologic, topographic, physiolog- ical, and climatic conditions. Further, Edwards et al. (2016) ob- serves, [ldquo][t]he similarity of forest road BMPs used in many dif- ferent states[rsquo] forestry BMP manuals and handbooks suggests a degree of confidence validation that may not be justified,[rdquo] be- cause they rely on just a single study. Id. at 133. Therefore, en- suring BMP effectiveness would require matching the site condi- tions found in that single study, a factor land managers rarely consider.

Climate change will further put into question the effectiveness of many road BMPs (Edwards et al. 2016). While the impacts of climate will vary from region to region (Furniss et al. 2010), more extreme weather is expected across the country which will increase the frequency of flooding, soil erosion, stream channel erosion, and

variability of streamflow (Furniss et al. 2010).

BMPs designed to limit erosion and stream sediment for current weather conditions may not be effective in the future. Edwards et al. (2016) states, [ldquo][m]ore-intense events, more frequent events, and longer duration events that accompany climate change may demonstrate that BMPs perform even more poorly in these situations. Research is urgently needed to identify BMP weaknesses under extreme events so that refinements, modifica- tions, and development of BMPs do not lag behind the need.[rdquo] Id. at 136.

Significant uncertainties persist about BMP or design feature ef- fectiveness as a result of climate change, compounded by the in- consistencies revealed by BMP evaluations, which suggests that the Forest Service cannot simply rely on them to mitigate project-level activities. This is especially relevant where the Forest Service relies on the use of BMPs instead of fully analyz- ing potentially harmful environmental consequences from road design, construction, maintenance or use, in studies and/or pro- grammatic and site-specific NEPA analyses.

As it stands, the Forest Service failed to conduct proper analysis of potential stream sedimentation from road use activities (e.g. log hauling) due to its flawed assumption that BMPs and design features will result in low sedimentation from the selected alter- native. 2021 Middleman EA at 196. The improper reliance on the flawed analysis precludes the agency from claiming it is in compliance with the CWA. The project is also in violation of NEPA, NFMA and the APA.

REMEDY

Suggested Resolution: Produce an EIS that demonstrates the ef- ficacy of BMPs and design features, and identify roads for stor- age or decommissioning necessary to preclude long-term sedi- mentation of 303(d) listed streams.

GRIZZLY BEAR SECURITY

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. We showed the court that this strategy is failing. 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 require- ments and threatens to significantly degrade

grizzly bear habitat se- curity. The revised Plan also abandons limits on human uses of roads and trails in secure bear habitat. In conducting its review of the amendment to the Forest Plan under the ESA, FWS did not rationally grapple with the impacts of this new management direction, as the law requires, before concluding in a Biological Opinion that the revised amendment will not jeopardize grizzly bears in the Helena-Lewis and Clark National Forest. The re- vised Plan and Biological Opinion therefore violate section 7 of the ESA. 16 U.S.C. [sect] 1536.

FWS and the Forest Service violated the ESA by arbitrarily dismiss- ing the threat to grizzly bears and lynx posed by roadbuilding and the proliferation of human use of roads and trails permitted under the final Record of Decision for the Forest Plan Amendments (Helena [ndash] Lewis and Clark, Kootenai, and Lolo National Forests) to Incorpo- rate Habitat Management Direction for the Northern Continental Di- vide Ecosystem Grizzly Bear Population.

The Forest Service must reconsult with the USFWS on the impact of this project and the Forest Plan Amendments (Helena [ndash] Lewis and Clark, Kootenai, and Lolo National Forests) to Incorporate Habitat Management Direction for the Northern Continental Di- vide Ecosystem Grizzly Bear Population on grizzly bears and bull trout and give the public a chance to comment on this consultation. It is a violation of NEPA, NFMA, the APA, and the ESA to not do so.

OLD GROWTH

We wrote in our comments:

Disclose the current level of old growth forest in each third order drainage in the Project

area;

Disclose the method used to quantify old growth forest acreages and its rate of error

based upon field review of its predictions;

Disclose the historic levels of mature and old growth forest in the Project area;

Disclose the level of mature and old growth forest necessary to sustain viable populations

of dependent wildlife species in the area;

Disclose the amount of mature and old growth forest that will remain after

implementation;

Disclose the amount of current habitat for old growth and mature forest dependent

species in the Project area;

2,506 acres of old growth will be logged or burned under the action alternative. What science are you using to justify this?

AA. Disclose the amount of habitat for old growth and mature forest dependent species that will remain after Project imple- mentation;

BB. Disclose the method used to model old growth and mature forest dependent wildlife habitat acreages and its rate of error based upon field review of its predictions;

Effect analyses for vegetation, old growth, and snags treatment on wildlife are invalid, do not support non-significant impacts of the project, and/or violate Forest Plan.

What science are you using to justify treating 2,506 acres of old growth? Using Green et. al., will this still be clarified as old growth?

The Forest Service responded:

As described in the Terrestrial Vegetation section, the treatments in old growth are designed to improve its resiliency in order to main- tain it on the landscape for a longer period of time, given the im- minent bark beetle and wildfire risks. In all cases, the minimum criteria defined in Green et al would be retained and the stands would continue to be old growth. Based on field work in 2020, the designations of old growth have been updated to incorporate losses (old growth that has been killed by bark beetles) and locate other stands to designate in their place. (P. 466).

Information on methods and existing habitat for old growth and mature forest dependent management indicator species can be ref- erenced in the Analysis of Management Indicator Species section in the preliminary and final EA and the Analysis Methods section in the draft and final Non-Big Game Wildlife Report. Information on old growth in third order drainages can be referenced in Terres- trial Vegetation in the draft and final EA. As noted in the Terrestri- al Vegetation section, the historic level of old growth is uncertain, but the analysis includes a discussion of this in general terms. The old growth whitepaper in the project record provides maps of the old growth in each third order drainage.

Reference Forest Plan Consistency table [ndash] Appendix C and the ter- restrial vegetation and wildlife resource sections in the EA for en- vironmental consequences for the analysis of effects and anticipat- ed

impacts.

OLD GROWTH DEFINITION

The Forest Service[rsquo]s failure to use the Forest Plan definition of old growth, and consequent failures to demonstrate compliance with Forest Plan old growth standards for retention and viability, vio- lates NFMA, NEPA, and the APA. The Forest Plan requirement is to maintain 5% of commercial for- est lands in each Timber Compartment as old growth forest, the Forest Service. The Middleman project is using the Green et al de- finition of old growth rather than the Forest Plan definition.[ldquo]Designated Old Growth: In the third order drainages associated with the Middleman Project, there are about 1,200 acres of desig- nated old growth that currently meet Green et al minimum criteria.[rdquo] (P. 68 of the EA). [ldquo]Old growth was determined using the Helena National Forest Old Growth Analysis Process (project record) and definitions pro- vided in Old-Growth Forest Types of the Northern Region (Green et al. 1992).[rdquo] (p. 54 of the EA). [ldquo]Old Growth Analysis The modified proposed action includes treatments in old growth stands; however, the project would de- sign all treatments occurring in old growth stands to retain old growth characteristics according to minimum criteria (Green et al. 1992), even in stands not designated to meet the Forest Plan stan- dard.[rdquo] (p. 152 of the EA)

The table below compares the requirements of Green et al old growth definition with the Forest Plan old growth definition:

Green et al definitionForest Plan definition
Minimum age of large treesRequiredNot required
Minimum number of trees per acres of a certain sizeRequiredNot required

Minimum Basal AreaRequiredNot required
One or more seral dominants on siteNot requiredRequired
Two or more layers or age classesNot requiredRequired
60 percent canopy closure at minimumNot requiredRequired
Dominant tree over 13" dbh and 50' tallNot requiredRequired
2 snags per acre at least 10" dbh at minimumNot requiredRequired
Sparse understory vegetation, shrubs, logs, down material common & well- distributedNot requiredRequired

As demonstrated by the table above, the two old growth defini- tions have different requirements: a stand that meets Green et al criteria will not necessarily meet the Forest Plan definition and vice versa. Thus, the application of the Forest Plan old growth de- finition would lead to a completely different old growth forest

analysis for this Project. The Forest Plan requires that Five percent The priority 6000 feet in of each third order drainage should be managed for old growth.

REMEDY

Withdraw the draft Decision Notice and FONSI and write an En- vironmental Impact Statement that fully complies with the Forest Plan and the law.

LARGE OPENINGS

We wrote in our comments:

The analysis of large openings includes no actual analysis as to why large openings will not significantly disrupt wildlife habitat, including elk and MIS (17, 27). There was also no analysis as to where these large openings will be created as per suitable and un- suitable timberlands. What would resource benefits be for large openings on unsuitable timberlands? (27)

The Forest Service responded:

The Terrestrial Vegetation section was updated to provide more in- formation regarding large openings in suitable versus unsuitable lands. In addition, based on field work in 2020, treatment unit was designed to reduce the amount and connectivity of large openings. The site-specific amendment provides a detailed analysis on the ef- fects of 100-acre openings on elk and effects to other wildlife is also included. See the section [ldquo]Effects of the Site-Specific Amend- ment on Other Wildlife[rdquo].

The project is in violation of NFMA, the Forest Plan, NEPA, and the APA for not getting approval from the Regional Office for openings larger than 40 acres.

REMEDY

Choose the No Action alternative or get approval from the Regional Office for openings larger than 40 acres.

WUI

We wrote in our comments:

1. Did the Forest Service conduct NEPA analysis (i.e. an EA or EIS) for the local Wildfire protection plan or the WUI which the Forest is using for this project?

2. If the Forest Service did not conduct NEPA for the Fire local Community Wildfire protection plan and or the Wildland Urban Interface, please immediately start that NEPA process.

3. Please provide a map showing the WUI and the locations of all homes in comparison to the project area.

4. If the Forest Service did not conduct NEPA for the the local Community Wildfire protection plan, please disclose the cumula- tive effect of the Middleman project to avoid illegally tiering to a non-NEPA document. Specifically analyze the decision to prior- itize mechanical, human-designed, somewhat arbitrary treatments as a replacement for naturally-occurring fire.

5. Did the Forest Service conduct ESA consultation for the local Community Wildfire protection plan?

The Forest Service responded:

A map depicting the Tri-county defined WUI is available within the Fuels Specialist report. Documentation of all homes within the project area is outside the scope of this project, as they are private residences.

Underthe Healthy Forest Restoration Act of 2003, NEPA is not re- quired on the Community Wildfire Protection Plan.

All Project units do not fall within the wildland urban interface as defined by the North Rockies Lynx Management Direction of Lynx Amendment, therefore the wildland urban interface exemp- tion is inapplicable and the Forest Service has authorized logging that is prohibited by the Lynx Amendment, in violation of NEPA, NFMA, and the APA.

REMEDY

Choose the No Action alternative or withdraw the DDN and write an EIS that fully complies with the law.

PURPOSE AND NEED

PURPOSE AND NEED, OBJECTIVES, GOALS, AND DESIRED CONDITIONS and BEST AVAILABLE SCIENCE

We wrote in our comments:

TheEAprovidesnoanalysis asto theveracity of the project[rsquo]s Pur- pose and Need, the project[rsquo]s objectives, goals, or desired condi- tions.

The Forest Service did not respond. This is a violation of NEPA.

Page 9 of the DDN states:

Ecosystem Resiliency, Diversity, and Restoration There is a need to develop and maintain desired vegetation conditions across the landscape and improve resiliency to disturbances including in- sects, disease, wildfire and drought.As outlined in the terrestrial vegetation section of the environmental assessment, the authorized treatments are designed to restore or maintain vegetation distribu- tion, composition, and structure similar to the natural range of variation; and improve resilience to disturbance agents. Roughly 95 percent of the authorized treatments will contribute to this ele- ment of the purpose and need. The following beneficial effects to terrestrial vegetation that will result from the modified proposed action are particularly compelling:

Please see the attached paper by Dr. William Baker titled: [ldquo]Are High-Severity Fires Burning at Much Higher Rates Recently than Historically in Dry-Forest Landscapes of the Western USA?[rdquo]

Dr. Baker writes: [ldquo]Programs to generally reduce fire severity in dry forests are not supported and have significant adverse ecological impacts, including reducing

habitat for native species dependent on early-successional burned patches and decreasing landscape heterogeneity that confers re- silience to climatic change.[rdquo]

Dr. Baker concluded: [ldquo]Dry forests were historically renewed, and will continue to be renewed, by sudden,

dramatic, high-intensity fires after centuries of stability and lower- intensity fires.[rdquo]

Based on Dr. Baker[rsquo]s paper, the proposed action will not meet the purpose and need of the project. Baker writes on p. 20: [ldquo]Management issues The evidence presented here shows that efforts to generally lower fire severity in dry forests for ecological restoration are not sup- ported.[rdquo]

Dr. Baker[rsquo]s paper is the best available science. Please explain why this project is not following the best availablescience. The Draft De- cision Notice is in violation of NEPA.

Remedy, choose the No Action Alternative or write an EIS that com- plies with the law.

In [ldquo]Fire Ecology in Rocky Mountain Landscapes[rdquo] by William Baker, Dr. Baker writes on page 435, [ldquo] [hellip]a prescribed fire regime that is too frequent can reduce species diversity (Laughlin and Grace 2006) and favor invasive species (M.A. Moritz and Odion 2004). Fire that is entirely low severity in ecosystems that historically ex- perience some high-severity fire may not favor germination of fire- dependent species (M.A. Moritiz and Odion 2004) or provide habi- tat key animals (Smucker, Hutto, and Steele 2005).[rdquo] Baker contin- ues on page 436: [ldquo]Fire rotations equal the average mean fire inter- val across a landscape and are appropriate intervals at which indi- vidual points or the whole landscape is burned. Composite fire intervals underestimate mean fire interval and fire rotation (chap 5) and should not be used as prescribed burning intervals as this would lead to too much fire and would likely lead to adversely af- fect biological diversity (Laughlin and Grace 2006).[rdquo]

Please find (Laughlin and Grace 2006) attached. We wrote in our comments:

[ldquo]The Forest Service should use the best available science regard- ing protecting these structures.

Fire Ecology in Rocky Mountain Landscapes, by William Baker says the Forest Service is over stating the frequency of wildfire. I have included this book as an attachment in my previous com- ments and incorporate it into these comments.

Dr. Baker writes that we use to think we could control wildfire with tools such as prescribed burns. He writes the science shows this is not true. All we can do is have the good sense to get our homes and infrastructure protected or out of fire prone settings, as fire will eventually come. This project attempts to tame wildlife, something Dr. Baker says is impossible. This project therefore violates NFMA by not following the best available science and not meeting the purpose and need of the project.[rdquo]

It is a violation of NEPA to not consider the best available science. We asked you to consider Baker[rsquo]s Fire Ecology in Rocky Mountain Landscapes and it is not even in your bibliography.

Based on Dr. Baker[rsquo]s paper, the proposed action will not meet the purpose and need of the project. Baker writes on p. 20: [ldquo]Management issues

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Please find (Laughlin and Grace 2006) attached.

Dr. Baker estimates the high severity fire rotation to be 135 - 280 years for lodgepole pine forests. (See page 162.). Baker writes on page 457-458 of Fire Ecology in Rocky Mountain Landscapes: [ldquo]Fire rotation has been estimated as about 275 years in the Rock- ies as a whole since 1980 and about 247 years in the northern Rockies over the last century, and both figures are near the middle between the low (140 years) and high (328 years) estimates for fire rotation for the Rockies under the HRV (chap. 10). These estimates suggest the since EuroAmerican settlement, fire control and other activities may have reduced fire somewhat in particular places, but a general syndrome of fire exclusion is lacking. Fire exclusion also does not accurately characterize the effects of land users on fire or match the pattern of change in area burned at the state level over the last century (fig 10.9). In contrast, fluctuation in drought linked to atmospheric conditions appear to match many state-level patterns in burned area over the last century. Land uses that also match fluctuations include logging, livestock grazing, roads and development, which have generally increased flammability and ig- nition at a time when the climate is warming and more fire is com- ing.[rdquo]

Schoennagel et al (2004) states: [ldquo]High-elevation subalpine forests in the Rocky Mountains typify ecosystems that experience infrequent, high-severity crown fires []. . . The most extensive subalpine forest types are composed of Engelmann spruce (Picea engelmannii), sub- alpine fir (Abies lasiocarpa), and lodgepole pine (Pinus contorta), all thin-barked trees easily killed by fire. Extensive stand-replacing fires occurred historically at long intervals (i.e., one to many centuries) in subalpine forests, typically in association with infrequent high-pres- sure blocking systems that promote extremely dry regional climate pat-terns.[rdquo] Please find Schoennagel et al (2004) attached.

Schoennagel et al (2004) states: [ldquo]it is unlikely that the short period of fire exclusion has significantly altered the long fire intervals in subalpine forests. Furthermore, large, intense fires burning under dry conditions are very difficult, if not impossible, to suppress, and such fires account for the majority of area burned in subalpine forests.

Schoennagel et al (2004) states: [ldquo]Moreover, there is no consistent re- lationship between time elapsed since the last fire and fuel abun- dance in subalpine forests, further undermining the idea that years of fire suppression have caused unnatural fuel buildup in this forest

zone.[rdquo]

Schoennagel et al (2004) states: [ldquo]No evidence suggests that spruce[ndash] fir or lodgepole pine forests have experienced substantial shifts in stand structure over recent decades as a result of fire suppression.

Overall, variation in cli-mate rather than in fuels appears to exert the largest influence on the size, timing, and se-verity of fires in sub- alpine forests []. We conclude that large, infrequent stand replacing fires are [lsquo]business as usual[rsquo] in this forest type, not an artifact of fire suppression.[rdquo].

Schoennagel et al (2004) states: [ldquo]Contrary to popular opinion, previ- ous fire suppression, which was consistently effective from about 1950 through 1972, had only a minimal effect on the large fire event in 1988 []. Reconstruction of historical fires indicates that similar large, high-severity fires also occurred in the early 1700s []. Given the historical range of variability of fire regimes in high- elevation subalpine forests, fire behavior in Yellowstone during 1988, al- though severe, was neither unusual nor surprising.[rdquo]

Schoennagel et al (2004)states: [ldquo]Mechanical fuel reduction in sub- alpine forests would not represent a restoration treatment but rather a departure from the natural range of variability in stand structure.[rdquo]
Schoennagel et al (2004) states: [ldquo]Given the behavior of fire in Yel- lowstone in 1988, fuel reduction projects probably will not substan- tially reduce the frequency, size, or severity of wildfires under ex- treme weather conditions.[rdquo]

Schoennagel et al (2004) states: [ldquo]The Yellow-stone fires in 1988 re- vealed that variation in fuel conditions, as measured by stand age and density, had only minimal influence on fire behavior. Therefore, we expect fuel-reduction treatments in high-elevation forests to be generally unsuccessful in reducing fire frequency, severity, and size, given the overriding importance of extreme climate in controlling fire regimes in this zone. Thinning also will not re-store subalpine forests, because they were dense historically and have not changed significantly in response to fire suppression. Thus, fuel- reduction ef- forts in most Rocky Mountain subalpine forests probably would not effectively mitigate the fire hazard, and these efforts may create new ecological problems by moving the forest structure out-side the his- toric range of variability.[rdquo]

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Please find Schoennagel et al (2004) attached.

The NEPA requires a [ldquo]hard look[rdquo] at climate issues, including cumu- lative effects of the [ldquo]treatments[rdquo] in the proposed project when added to the heat, drought, wind and other impacts

associated with in- creased climate risk. Regeneration/Restocking 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 [ldquo]the human environment.[rdquo] Climate risk presents important adverse impacts on cultural, eco- nomic, environmental, and social aspects of the human environment.

[ndash] people, jobs, and the economy [ndash] adjacent to and near the project area. [ldquo]Challenges in predicting responses of individual tree species to climate are a result of species competing under a never-before-seen climate regime [ndash] one forests may not have experienced before either. In an uncertain future of rapid change and abrupt, unforeseen transi- tions, 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 inconsis tent with and not informed by current understanding of our novel fu- ture....

Achievable future conditions as a framework for guiding forest con- servation and management, Forest Ecology and Management 360 (2016) 80[ndash]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 [ldquo]management[rdquo] as proposed in the project area. The project is currently is violation of NEPA, NFMA, and the APA.

REMEDY

Withdraw the draft Decision Nocie and write an EIS that fully complies with the law.

CARBON

We wrote in our comments:

The EA does not analyze or disclose the body of science that impli- cates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. The EA fails to provide estimates of the total amount of carbon dioxide (CO2) or other greenhouse gas emissions caused by FS management actions and policies[mdash]forest-wide, regionally, or nationally. Agency poli- cymakers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures. The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmos- pheric CO2. Unsurprisingly the EA doesn[rsquo]t state that simple fact.

The Forest Service responded:

The climate and carbon section in the EA and specialist report ad- dresses this concern. Logging does cause short-term reductions in carbon storage, but also stores carbon in wood products and helps improve the resiliency and future carbon storage.

The Helena Lewis and Clark National Forest has not yet accepted that the effects of climate risk represent a significant issue, and emi- nent loss of forest resilience already, and a significant and growing risk into the [ldquo]foreseeable future?[rdquo]

It is now time to speak honestly about unrealistic expectations relat- ing to desired future condition. Forest managers have failed to dis- close that at least five common tree species, including aspens and four conifers, are at great risk unless atmospheric greenhouse gases and associated temperatures can be contained at today[rsquo]s levels of concentration in the atmosphere. (See attached map). This cumulative ([ldquo]reasonably foreseeable[rdquo]) risk must not continue to be ignored at the project-level, or at the programmatic (Forest Plan) level.

Global warming and its consequences may also be effectively irre- versible which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR [sect] 1502.16; 16 USC [sect]1604(g); 36

CFR [sect]219.12; ESA Section 7; 50 CFR [sect][sect]402.9, 402.14). All net car- bon emissions from logging represent [ldquo]irretrievable and irreversible commitments of resources.[rdquo]

It is clear that the management of the planet[rsquo]s forests is a nexus for addressing this largest crisis ever facing humanity. Yet the FSEIS fails to even provide a minimal quantitative analysis of project- or agency-caused CO2 emissions or consider the best available science on the topic. This is immensely unethical and immoral. The lack of detailed scientific discussions in the FSEIS concerning climate change is far more troubling than the document[rsquo]s failures on other topics, because the consequences of unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all human societies. This is an issue as serious a nuclear annihilation (although at least with the latter we[rsquo]re not already pressing the button).

The EA provided a pittance of information on climate change effects on project area vegetation. The FSEIS provides no analysis as to the veracity of the project[rsquo]s Purpose and Need, the project[rsquo]s objectives, goals, or desired conditions. The FS has the responsibility to inform the public that climate change is and will be bringing forest change. For the Galton project, this did not happen, in violation of NEPA.

The FEA fails to consider that the effects of climate change on the project area, including that the [ldquo]desired[rdquo] vegetation conditions will likely not be achievable or sustainable. The EA fails to provide any credible analysis as to how realistic and achievable its desired condi- tions are in the context of a rapidly changing climate, along an un- predictable but changing trajectory.

The Forest Plan does not provide meaningful direction on climate change. Nor does the EA acknowledge pertinent and highly relevant best available science on climate change. This project is in violation of NEPA.

The EA does not analyze or disclose the body of science that impli- cates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. The EA fails to provide estimates of the total amount of carbon dioxide (CO2) or other greenhouse gas emissions caused by FS management actions and policies[mdash]forest-wide, regionally, or nationally. Agency policy- makers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmos- pheric CO2. Unsurprisingly the FSEIS doesn[rsquo]t state that simple fact.

The EA fails to present any modeling of forest stands under different management scenarios. The FS should model the carbon flux over time for its proposed stand management scenarios and for the vari- ous types of vegetation cover found on the HLCNF.

The EA also ignores CO2 and other greenhouse gas emissions from other common human activities related to forest management and recreational uses. These include emissions associated with machines used for logging and associated activities, vehicle use for administrative actions, and recreational motor vehicles. The FS is simply ignor- ing the climate impacts of these management and other authorized activities.

The Committee of Scientists, 1999 recognize the importance of forests for their contribution to global climate regulation. Also, the 2012 Planning Rule recognizes, in its definition of Ecosystem services, the [ldquo]Benefits people ob- tain from ecosystems, including: (2) Regulating services, such as long term storage of carbon; climate regulation...[rdquo]

We have no more time to prevaricate, and it[rsquo]s not a battle we can afford to lose. We each have a choice: submit to status quo for the profits of the greed- iest 1%, or empower ourselves to limit greenhouse gas emissions so not just a couple more generations might survive.

The District Court of Montana ruled in Case 4:17-cv-00030- BMM that the Federal government did have to evaluate the climate change impacts of the federal government coal pro- gram. Please find the order 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 leas- ing, 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[rsquo]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 project is in violation of NEPA, NFMA, the APA, the ESA for not examining the impacts of the project on climate change. The project will eliminate the forest in the project area. Forests absorb carbon. The project will destroy soils in the project area. Soils are carbon sinks.

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.

[ldquo]The drier aspects aren[rsquo]t coming back, especially on north-facing slopes,[rdquo] said Kim Davis, a UM landscape ecologist and lead inves- tigator on the study. [ldquo]It[rsquo]s not soil sterilization. Other vegetation like grasses are re-sprouting. It[rsquo]s too warm. There[rsquo]s not enough moisture for the trees.[rdquo] 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. [ldquo]What[rsquo]s striking is if you asked scientists two decades ago how cli- mate warming would play out, this is what they expected we[rsquo]d see,[rdquo] Higuera said. [ldquo]And now we[rsquo]re starting to see those predictions on the impact to ecosystems play out.[rdquo]

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.

[ldquo]We did over 4,000 miles of road-tripping across the West, as well as lots of miles hiking and backpacking,[rdquo] 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. [ldquo]There used to be enough variability in seasonal conditions that seedlings could make it across these fixed thresholds,[rdquo] Dobrowski said. [ldquo]After the mid-[lsquo]90s, those windows have been closing more of- ten. We[rsquo]re worried we[rsquo]ll lose these low-elevation forests to shrubs or grasslands. That[rsquo]s what the evidence points to.[rdquo] 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 vir- tually all sites since 2000. [ldquo]The six sites we looked at in the Bitterroots haven[rsquo]t been above the summer humidity threshold since 1997,[rdquo] Higuera said. [ldquo]Soil mois- ture hasn[rsquo]t crossed the threshold since 2009.[rdquo] 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 explained that some higher elevation forests are returning to their more sparse historical look due to increased fires. [ldquo]But at the lower fringes, those burn areas may transition to non- forest types,[rdquo] Higuera said, [ldquo]especially where climate conditions at the end of this century are different than what we had in the early 20th Century.[rdquo]

The study also found that soil sterilization wasn[rsquo]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[rsquo]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.

Remedy: Choose the No Action Alternative. Revise the Forest Plan to take a

hard look at the science of climate change. Alternatively, draft a new EIS for this project if the FS still wants to pursue it, which includes an analysis that examines climate change in the context of project activities and Desired

Conditions. Better yet, it[rsquo]s time to prepare an EIS on the whole bag of U.S. Government climate policies.

NFMA - RESTOCKING

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 regenera- tion failure. The forest has already experienced considerable difficul- ty restocking on areas that have been subjected to

prescribed fire, clear-cut logging, post- fire salvage logging and other even-aged management [ldquo]systems.[rdquo]

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 Helena Lewis and Clark National Forest can no longer [ldquo]insure that timber will be harvested from the National Forest system lands only where[hellip]there is assurance that such lands can be restocked within five years of harvest?[rdquo] (NFMA[sect]6(g)(3)(E)(ii)).

The project goals and expectations are not consistent with NFMA[rsquo]s [ldquo]adequate restocking[rdquo] requirement. Scientific research can no longer be ignored.

[ldquo]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 demon- strate 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.[rdquo] 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.

Where is the reference to restocking? Monitoring data and analysis? If monitoring has been done there is no disclosure documenting the scope and probability of post-fire regeneration failures in the project area. NFMA requires documentation and analysis that accurately estimates climate risks driving regeneration failure and deforestation [ndash] all characteristic of a less [ldquo]resilient[rdquo] forest. [ldquo]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 re- sults suggest that predicted shifts from forest to non-forested vegeta- tion.[rdquo] Evidence for declining forest resilience to wildfires under climate change, Ecology Letters, (2018) 21: 243[ndash]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[rsquo]t shown [ldquo]re- silience[rdquo] 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 re- search supporting our comments focus on important data and analy- sis. A full discussion and disclosure of the following is required: 1) trends in wildfires, insect activity and tree mortality, 2) past regener- ation success/failure in the project area, and 3) climate-risk science [ndash] some of which is cited below. Our comments, and supporting scientific re- search clearly [ldquo]demonstrates connection between prior specific written comments on the particu- lar proposed project or activity and the content of the objection[hellip][rdquo] 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, [hellip] the Secretary shall [hellip] promulgate reg- ulations, under the principles of the Multiple-Use, Sustained-Yield Act of 1960[hellip]

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. [sect] 219.27 (Management require- ments) state:

(a) Resource protection. All management prescriptions shall[mdash]

(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 con- servation of soil and water resources;

The project-level, and programmatic-level (Forest Plan) fail to pub- licly disclose the current and future impacts of climate risk to our na- tional forests. NEPA requires cumulative effects analysis at the pro- grammatic level, and

at the project-level. The failure to assess and disclose all risks associated with vegetative-manipulation (slash and burn) units in the project area in the proper climate-risk context/sce- nario violates the NFMA, NEPA and the APA.

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[rsquo]s poor history of restocking success and its failure to employ the best available science, the adequacy of the site-specif- ic and programmatic NEPA/NFMA process begs for further analysis and disclosure of the reality of worsening climate conditions which threaten [ndash] directly and cumulatively [ndash] 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 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 adjust- ments, all in full public disclosure to the Congress and the American people.

The EA fails to acknowledge the likelihood that [ldquo][hellip]high seedling and sapling mortality rates due to water stress, competing vegetation, and repeat fires that burn young stands,[rdquo] 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[rsquo]t shown [ldquo]re- silience[rdquo] 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 ServiceResearch 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:

[ldquo]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 chang- ing 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 ap- propriate 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 deci- sions on the assumption that present site conditions are similar to those of the past.[rdquo]

[ldquo]This may no longer be the case.[rdquo]

REMEDY

Suggested remedies: Choose the No Action Alternative or Forest Plan Amendments are needed to establish standards and guidelines which acknowledge the significance of cli- mate risk to other multiple-uses. Amendments must not only analyze forest-wide impacts, but the regional, national and global scope of expected environmental changes. Based on scientific research, the existing and projected irretrievable losses must be estimated. Impacts caused by gathering cli- mate risk (heat, drought, wind) and its symptoms, including wildfire, insect activity, and regeneration failure and mature tree mortality must be analyzed cumulatively.

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 [ndash] 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 draft decision is in violation of NEPA, NFMA, the ESA and the APA because the project will adversely affect biological diversity, is not following the best available since and the purpose and need will not work.

Remedy: Choose the No Action Alternative or write an EIS that ful- ly complies with the law.

FIRE PLAN-WUI

We wrote in our comments:

1. DidtheForestService conduct NEPA analysis (i.e. an EA or EIS) for the Fire Plan?

2. IftheForest Service did not conduct NEPA for the Fire Plan, please immediately start that NEPA process.

3. Please provide a map showing the WUI and the locations of all homes in com- parison to the project area.

4. IftheForest Service did not conduct NEPA for the Fire Plan, please disclose the cumulative effects of Forest-wide imple- mentation of the Fire Plan in the DEIS to avoid illegally tier- ing to a non-NEPA document. Specifically analyze the deci- sion to prioritize mechanical, human-designed, somewhat ar- bitrary treatments as a replacement for naturally-occurring fire.

5. Did the Forest Service conduct ESA consultation for the FirePlan?

6. Did the Forest Service formally consult on the NRLMD in lynx critical habitat?[rdquo]

The Forest Service responded:

UndertheHealthy Forest Restoration Act of 2003, NEPA is not re- quired on the Community Wildfire Protection Plan

The Forest Service must consult with the USFWS on the Fire Plan and impact of this project on lynx, lynx critical habitat and and the NRLMD in lynx habitat and give the public a chance to comment on this consultation. It is a violation of NEPA, NFMA, the APA, and the ESA to not do so.

The Remedy is to pull the draft Decision Notice and write an EIS af- ter the public has a chance to see and comment on the Forest Service[rsquo]s consultation with the USFWS on this impacts of this project and lynx habitat.

MIS

We wrote in our comments:

Disclose and address the concerns expressed by the ID Team in the draft Five-Year Review of the Forest Plan regarding the failure to monitor population trends of MIS, the inadequacy of the Forest Plan old growth standard, and the failure to compile data to estab- lish a reliable inventory of sensitive species on the Forest;

The Forest Service responded:

The viability analysis concluded that habitat would remain well distributed across the planning area to sustain MIS.

The HNF continues to rely on wildlife habitat models for TES and MIS, utilizing the TSMRS or a similar database, of unproven relia- bility. The HNF cites no on-the- ground studies verifying the as- sumptions made with the use of these models.

In his 1991 book, In the Absence of the Sacred, Jerry Mander notes criticisms of the use of computers by the Forest Service biologists, and discusses the loss of relationship between hu- mans and their wildlife neighbors as computers are utilized more widely by biolo- gists (see Man- der, 1991).

The HNF has consistently ignored the Region[rsquo]s guidance document for old- growth species[rsquo] habitat management (USDA Forest Service, 1990). From USDA Forest Service, 1990:

The greater vertical and horizontal diversity found within an old- growth stand al- lows for niche specialization by wildlife. Although the individual wildlife species occurring may not be unique to old- growth stands, the assemblage of wildlife species and the complexity of interactions between them are different than in earli- er succes- sional stages.

P. 2 Forest-wide estimates are needed of the relative abundance, patch sizes, and spa- tial distribution of old-growth habitat by forest type.

P. 3 In northwestern Montana, McClelland (1977) described a general trend of increased species richness in cavity-nesting birds from young to old-growth stands of larch and Douglas-fir. Old growth was par- ticularly important in providing an adequate number of suitable nesting trees for cavity-nesters.

P. 6 Patch size correlates strongly with the numbers of species and indi- viduals that can be supported and with rates of extinction and recol- onization.[rdquo] ... Of 48 old-growth-associated species occurring in the Northern Region, about 60 percent are thought to require stands larger than 80 acres.

P. 8 Roads are generally undesirable within an old-growth habitat patch.

P. 9 Providing for well-distributed habitat patches with interconnections be- tween patches thus is necessary to maintain species diversity over the long term.

McClelland (1979a) noted that pileated woodpeckers usually avoid open areas for feeding, preferring forests with a significant old- growth compo- nent and high basal area. ...Bull and Meslow (1977) classified preferred feeding habitats as having high densities of snags and logs, dense canopies, and tall ground cover, with more than 10% of the ground area covered by logs. Pp. 11-12.

In the northern Rockies, the density of snags and stumps at pileated feeding sites (not throughout the feeding range) averaged 7 per acre (Aney and McClelland 1985). At least 500 acres of suitable feeding

habitat is needed within the home range of a pair (McClelland 1979a). P. 12.

Monitoring Old-growth Habitats and MIS

Landres et al. (1988) pointed out that identifying old-growth stands based on habitat requirements of the MIS, and then monitoring habi- tat conditions for those MIS to assess old-growth conditions, is cir- cular reasoning. Because old-growth associated MIS are intended to represent a community of wildlife species, stand selection, manage- ment and monitoring should not be directed only towards the mini- mum requirements of MIS. Both general habitat conditions in rela- tion to an ecological classification and suitability of the stands or patches to MIS need to be monitored. P. 38, emphasis added.

Three levels of monitoring intensity have been identified for Forest Plan implementation: implementation, effectiveness, and validation monitoring. Monitoring of habitats should be emphasized at all lev- els, with additional monitoring of habitat occupancy and population trends of MIS as appropriate. P. 38.

Monitoring Intensity

Model predictions can be tested by sampling a portion of the desig- nated old-growth stands to determine the actual rate of occupancy by management indicator species. P. 38.

Validation Monitoring

Model validation should include tests to determine whether model output correctly predicts habitat quality. Reproductive performance over time is a good indicator of site productivity. P. 39.

Validation of Effects of Management Practices on Population Viability

Monitoring data should enable comparison of [lsquo]control[rsquo] and [lsquo]treat- ment[rsquo] ter- ritories. Otherwise, it will be unclear whether observed population changes were due to habitat change, weather, prey popu- lation cycles, or other fac- tors. P. 39.

Methods For Habitat Monitoring

Aerial photo interpretation or other remotely-sensed data are suitable to determine cover type, overstory tree size, percent canopy cover, and stand acreage. Additional sampling effort will be needed to ob- tain reasonably accurate estimates of size and density of dead trees, standing and down. P. 40.

Methods For Monitoring Pileated Woodpecker (field methodologies given, p. 40)

Methods For Monitoring Goshawk (field methodologies given, pp. 40-41)

Methods For Monitoring Marten (field methodologies given, p. 41)

Logging and other disturbance associated with the project and See- ley-Swan Fire Plan could affect northern goshawk nesting, post- fledging family habitat, al- ternative nesting, foraging, competitors, prey and potential habitat, including areas far from cutting units. Re- search in the Kaibab National Forest found that goshawk populations decreased dramatically even after partial logging and even when large buffers around nests were provided (Crocker-Bedford, 1990).

The HNF ignores important scientific information on goshawk habi- tat requirements. Reynolds, et al. 1992 provide a basis for a northern goshawk conservation strategy that could be implemented if forest- wide habitat considerations were to be truly taken into account. They suggest that it is essential to viability of goshawks that 20-50% of old growth within their nesting areas be main- tained, yet the HNF fails to recognize that (see also Suring et al. 1993). Graham, et al. 1999, USDA Forest Service 2000b, Iverson et al. 1996, and Suring et al. 1993 are more examples of northern goshawk conservation strategies the FS might adopt for this Forest or Region, if em- phasis was more appropriately placed on species conservation and insuring viability rather than justification for resource extraction.

USDA Forest Service 2000b recommends that forest opening greater than 50-60 acres be avoid- ed in the vicinity of goshawks. At least five years of monitoring is necessary to allow for effective estimates of habitat quality (Id.). Research suggests that a localized distribu- tion of 50% old growth should be maintained to allow for viability of goshawks (Suring et al. 1993).

The scientific information provided in Center for Biological Diversi- ty, 2004, also conflicts with the HNF[rsquo]s analyses and conclusions re- garding goshawk viability, and includes vital information on goshawks not considered by the HNF.

Goshawks are often associated with a thick overstory cover and ar- eas with a large number of large trees. For example, Hayward and Escano (1989) recom- mend an overstory canopy between 75 and 80%. According to the BE/BA for the Keystone Quartz EIS in the Beaverhead NF, [ldquo]Goshawks prefer vegetation structure that permits

them to approach prey unseen and to use their flight ma- neuverabili- ty to advantage (Widen, 1989, Beier and Drennan 1997)...[rdquo]

Opening forests by logging will increase suitability of species as the red-tailed hawk, who competes with goshawks, as well as the great horned owl, a goshawk predator. The problems of habitat conversion from that of goshawk to red-tailed hawk has been reported by La Sorte et al., 2004 based on a study of over 120 goshawk territories.

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 recom- mended 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 nest- ing area would contradict the Reynolds et al. (1992) guidelines.

Greenwald et al., 2005 reviewed the current literature on goshawk habitat relationships applica- ble to the Northern Rockies. Nine of 12 studies demonstrated selection for stands with higher canopy clo- sure, larger tree size, and greater numbers of large trees than found in random stands. Some notable statements and conclusions include:

...Most studies found that goshawks avoided open areas and logged early-seral stands; none of the studies cited in this paper found selection for such features.

...While some studies suffered from small sample sizes or relatively short sampling peri-

ods, the consistency of results demonstrates goshawk selection for late-successional forest structures (e.g., high canopy closure, large trees for forest type, canopy layering, abundant coarse woody debris) when using areas within their studied home ranges. ... This is not to say that goshawks only forage or roost in mature stands, but rather that such stands are dis- proportionately selected.

... (R)eviewed studies found goshawks avoided open areas, particu- larly logged open areas, and none found selection for openings.

... The 5 studies correlating nest occupancy and productivity with habitat features consis- tently demonstrated a relationship between closed-canopied forests with large trees and goshawk occupancy.

Occupancy rates were reduced by removing forest cover in the home range, which thereby resulted in reduced productivity because there were fewer active breeding territories. (Internal citations omitted.)

Seeking to promote abundant populations of 14 prey species, Reynolds et al. (1992) rec- ommend maintaining 20% of the land- scape in grass[ndash]forb or seedling[ndash]sapling stage forest, 20% in young forest, 20% in mid-aged forest, and 40% in mature and old forests.

...Given the above findings that goshawks generally avoid open areas and early-seral forest, that logging reduces goshawk occupancy and productivity, and a lack of evidence that creating openings or young forest through logging benefits goshawks, these recommendations ap- pear to lack support in research produced since 1992.

Across most of the western United States, mature and old-forests have declined to much less than 40% of the landscape. Given these declines and the lack of information on the amounts of mature and old-forest goshawks require, we recommend protecting existing ma- ture and old-forest characteristics and ensuring that such forests are allowed to develop in proportions similar to presettlement condi- tions. This can be accomplished by restricting cutting to small trees, and prohibiting large reductions in canopy closure. A similar pro- posal was recently adopted by Region 5 of the United States Forest Service for the Sierra Nevada. In sum, based on apparent inconsis- tencies between subsequent research and Reynolds et al. (1992), we recommend adaptation of the management guidelines to incor- po- rate results of numerous studies conducted since 1992. (Internal cita- tions omitted.)

The issue of fragmentation should have been more thoroughly con- sidered with respect to goshawks. Other edge-adapted species may compete with the goshawk and displace the goshawk if inadequate amounts of interior forest habitat are available. Crocker-Bedford (1990) recom- mends that a foraging area of >5000 acres of dense forest, in which no logging is permitted, be designated for goshawks, with additional areas of 2500-5000 acres of more marginal habitat designated beyond this 5,000 acre foraging area.[rdquo] It is a violation on NFMA and NEPA to ignore these issues and con- cerns. The Remedy is the No Action Alternative.

We wrote in our comments:

[ldquo]The HNF fails to take seriously the uncertain and precarious popu- lation status of the fisher, as described in Witmer, et al., 1998: The status of the fisher in the Western United States is poorly known but generally per- ceived as precarious and declining. This is a seri- ous issue alone, but it also is a component of the larger problem of the decline of biological diversity. Recovery of species of concern must necessarily focus on the population level, because this is the scale at which genetic variation occurs and because population [sic] are the constituent elements of communities and ecosystems. Sys- tematic habitat alteration and overexploitation have reduced the his- tor- ical distribution of fishers in suitable habitat in the interior Co- lumbia basin to isolated and fragmented populations. Current popu- lations may be extremely vulnerable to local and re- gional extirpa- tion because of their lack of connectivity and their small numbers (Id. at 14, internal citations omitted).

The proposed logging could adversely impact fishers and their habi- tat. Habitat elements for natal and maternal dens are found in large diameter logs or snags, slated to be reduced by the logging. [ldquo]Though the post-treatment stand condi- tion would not be 'clear cuts', they would be fairly open and Jones (1991) did not expect to find sub- stantial fisher hunting use of plantations by fishers until canopy ap- proached 80% and 10-15 feet respectively (depending on snow depths)[rdquo] (Helena NF[rsquo]s Spotted Beetle EA, p. 3-62). The logging, snag removal and other activities associated with the Hidden Lake Fuel Reduction project would negatively affect

fisher habitat.

Movement, denning, resting areas, ge- netic diversity, and other as- pects of fisher life cycles and fisher survival could be impacted by the project; the FS does not fully consider these elements of the project or adequately mitigate their impacts.

Jones (undated) and the LNF[rsquo]s Johnsen (1996) provide examples of possible conservation strate- gies for the fisher, something the FS has so far neglected to implement for this Sensitive species.

REMEDY

Choose the No Action alternative to write an EIS that full complies with the law.

CONCLUSION

The remedy is to choose the No Action Alternative or prepare a legally valid EIS, comply with all NEPA, NHPA ESA, APA, Road- less Rule, Forest Plan and NFMA requirements noted herein.

Pursuant to 36 CFR Part 218, and the APA, the Regional Office must respond to each of the above issues. As shown above, the DN/FON- SI and EA must be overturned and vacated and the project cannot be approved as currently re- viewed and proposed.

Thank you for your attention to these concerns.