May 8, 2022

Steve Brown, Ranger
Stevensville Ranger Station
Bitterroot National Forest
Attn: Bitterroot Face Project
88 Main Street
Stevensville, MT 59840

To Whom It May Concern;

Thank you for this opportunity to comment. Please accept these comments from me on behalf of the Alliance for the Wild Rockies, Native Ecosystems Council, Montana Ecosystem Defense Council, Friends of the Bitterroot, and Friends of the Clearwater on the proposed Bitterroot Face Project.

We ask that you follow NEPA and tell the public where, what and how you will mange the project area. We ask that you do not do “continued based management” as you have proposed with the Bitterroot Front project

We believe because of the size of the project and the cumulative effects of past current and future logging by the Forest Service and private logging and mining in the area the Forest Service must complete a full environmental impact statement (EIS) for this Project. The scope of the Project will likely have a significant individual and cumulative impact on the environment. Alliance has reviewed the statutory and regulatory requirements governing National Forest Management projects, as well as the relevant case law, and compiled a check- list of issues that must be included in the EIS for he Project in order for the Forest Service's analysis to comply with the law. Following the list of necessary elements, Alliance has also included a general narrative discussion on possible impacts of the Project.

I. NECESSARY ELEMENTS FOR

PROJECT EIS:

A. Disclose all Bitterroot National Forest Plan requirements for logging/burning projects and explain how the Project complies with them;

B. Will this project comply with forest plan big game hiding cover standards?

C. Disclose the acreages of past, current, and reasonably fore-seeable logging, grazing, and road building activities within the Project area. Please analyise the cumulative effects of the project.

D. Solicit and disclose comments from the Montana Department of Fish, Wildlife, and Parks regarding the impact of the Project on wildlife habitat;

E. Solicit and disclose comments from the Montana Department of Environmental Quality regarding the impact of the Project on water quality;

F. Disclose the biological assessment for the candidate, threatened, or endangered species with potential and/or actual habitat in the Project area;

G. Disclose the biological evaluation for the sensitive and management indicator species with potential and/or actual habitat in the Project area;

H. Disclose the snag densities in the Project area, and the method used to determine those densities;

I. Disclose the current, during-project, and post-project road densities in the Project area;

J. Disclose the Bitterroot National Forest's record of compliance with state best management practices regarding stream sedimentation from ground-disturbing management activities;

K. Disclose the Bitterroot National Forest's record of compliance with its monitoring requirements as set forth in its Forest Plan;

L. Disclose the Bitterroot National Forest's record of compliance with the additional monitoring requirements set forth in previous DN/FONSIs and RODs on the Bitterroot National Forest;

M. Disclose the results of the field surveys for threatened, endangered, sensitive, and rare plants in each of the proposed units;

N. Please formally consult with the US FWS on the impacts of this project on candidate, threatened, or endangered species and plants;

O. Please formally consult with the US FWS on the impacts of this project on lynx, lynx critical habitat and potential lynx critical habitat;

(The US District Court just ordered the US FWS to redo their designation of lynx critical based on where lynx were in 2000 when lynx were listed.

Please formally consult with the US FWS on the impacts of this project on bull trout and bull trout critical habitat.

Please formally consult with the US FWS on the impacts of this project on grizzly bears.

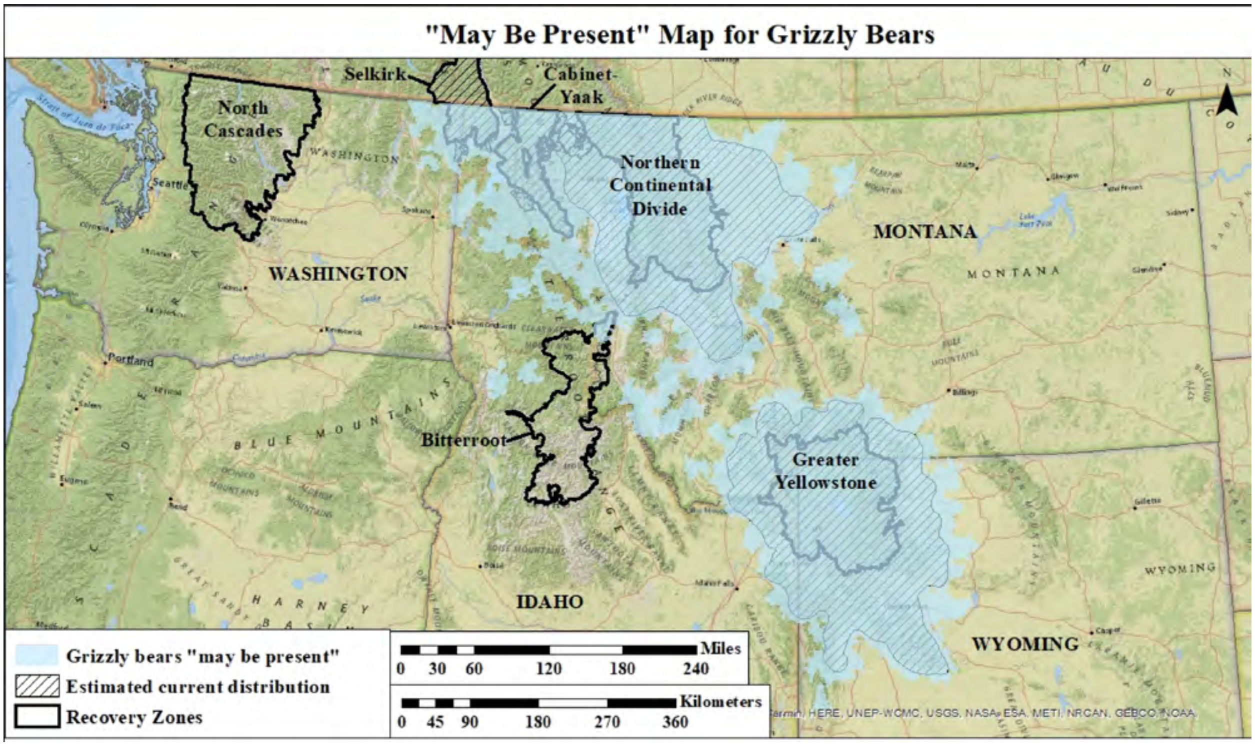
On January 21, 2020, USFWS sent a letter to the National Forest Supervisors of the Bitterroot, Nez Perce- Clearwater, Lolo, and Salmon-Challis National Forests in Montana and Idaho, which states in part (emphasis added):

The [Bitterroot Grizzly Bear Experimental Population Area] was designated as a nonessential experimental population by 50 CFR § 17.84(1), and the rule authorized the release of grizzly bears into the BGBEPA, outside its current range, under certain conditions. The Service is aware of one collared bear within the BG-

BEPA, and it travelled into the BGBEPA from the Cabinet-Yaak recovery zone. This grizzly bear was not released or reintroduced into the BGBEPA by the Service, and Service has not released or reintroduced any grizzly bears into the BGBEPA. Therefore, grizzly bears that are present in the BGBEPA are not covered by the 10(j) rule and are considered threatened under the ESA. This means that ESA section 7 consultation obligations apply to proposed federal agency actions that may affect grizzly bear in the BGBEPA, as with any grizzly bear in the lower 48 States.

We are updating the species occurrence map with locations where grizzly bears may be present within and near the BGBEPA. Upon completion, we will provide that map to you, to inform where section 7 consultation is advised.

The most recent version of USFWS's "may be present" grizzly bear map (dated January 11, 2021) is set forth below, and includes areas with known populations, as well as watersheds with a verified occurrence, and watersheds directly adjacent to watersheds with a verified occurrence:



As noted in the map above, USFWS concedes that grizzly bears may be present in a number of locations between the Bitterroot Recovery area and other Recovery Zones, as well as within the Bitterroot Recovery Area itself.

Over the past 5 years, grizzly bears have been confirmed in Montana in the town of Lolo, up Bass Creek, in the Rock Creek area, in the Big Hole, in the Sapphires, on the border of the Lee Metcalf Wildlife Refuge on the Bitterroot River (on a small golf course), in the Lolo Hots Springs area, in Missoula's North Hills, outside of Missoula in the Miller Creek area, in the Eight Mile area northeast of Florence, and near the headwaters of the east fork of the Bitterroot River.

Please see the attached report entitled, "The Grizzly Bear Promised Land: Past, Present & Future of Grizzly Bears in the Bitterroot, Clearwater, Salmon & Selway Country," by Dr. David Mattson, finds that grizzly recovery in the Bitterroot population is the lynchpin to a long-term, sustainable, viable grizzly population in the lower-48 States.

Please formally consult with the FWS on the impact of the Forest Plan on grizzly bears, lynx and bull trout and bull trout critical habitat.

P. Will this Project exacerbate existing noxious weed infestations and start new infestations?

Q. Do unlogged old growth forest store more carbon than the wood products that would be removed from the same forest in a logging operation?

R. What is the cumulative effect of National Forest logging on U.S. carbon stores? How many acres of National Forest lands are logged every year? How much carbon is lost by that logging?

S. Is this Project consistent with "research recommendations (Krankina and Harmon 2006) for protecting carbon gains against the potential impacts of future climate change? That study recommends "[i]ncreasing or maintaining the forest area by avoiding de-forestation," and states that "protecting forest from logging or clearing offer immediate benefits via prevented emissions." That study also states that "[w]hen the initial condition of land is a productive old-growth forest, the conversion to forest plantations with a short harvest rotation can have the opposite effect lasting for many decades . . . ." The study does state that thinning may have a beneficial effect to stabilize the forest and avoid stand replacing wildfire, but the study never defines thinning. In this Project, where much of the logging is clear-cutting and includes removing large trees without any diameter limit, and where the removal of small diameter surface and ladder fuels is an unfunded man- date to the tune of over $3 million dollars, it is dubious whether the prescriptions are the same type of "thinning" en- visioned in Krankina and Harmon (2006).

Page 3 of the scoping notice states: ***The primary historical fire regimes3 within the assessment area had short to moderately short fire-free intervals, and were not typically stand replacing fires. Examining fire scars across multiple locations on the Bitterroot National Forest, Arno (1976) found an average fire-free interval of 11-16 years in ponderosa and Douglas-fir and 16-27 years in Douglas-fir, lodgepole pine dominated sites dur-ing the period of 1734-1889. The departure from the desired historic conditions within the assessment area is especially pronounced within Fire Regimes I & II where, based on Arno's research, the mean fire free period was 19 years (Table 2). Over the past 129 years, only approximately 4% of the acres that should have experienced multiple fires have even burned***

once. This departure from natural disturbance patterns has led to major changes in fuels and vegetation composition.

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

Dr. Baker writes: ***"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 resilience to climatic change."***

Dr. Baker concluded: ***"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."***

Based on Dr. Baker's paper, the proposed action will not meet the purpose and need of the project. Baker writes on p. 20:

"Management issues

The evidence presented here shows that efforts to generally lower fire severity in dry forests for ecological restoration are not supported."

Dr. Baker's paper is the best available science. Please explain why this project is not following the best available science.

In "Fire Ecology in Rocky Mountain Landscapes" by William Baker, Dr. Baker writes on page 435, " ***…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 experience some high-severity fire may not favor germination of fire-dependent species (M.A. Moritz and Odion 2004) or provide habitat key animals (Smucker, Hutto, and Steele 2005)***." Baker continues on page 436: ***"Fire rotations equal the average mean fire interval across a landscape and are appropriate intervals at which individual 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 affect biological diversity (Laughlin and Grace 2006)."***

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: "***Fire rotation has been estimated as about 275 years in the Rockies 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 ignition at a time when the climate is warming and more fire is coming.***"

Schoennagel et al (2004) states: "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), subalpine 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-pressure blocking systems that promote extremely dry regional climate pat-terns." Please find Schoennagel et al (2004) attached.

Schoennagel et al (2004) states: "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: "Moreover, there is no consistent relationship between time elapsed since the last fire and fuel abundance in subalpine forests, further undermining the idea that years of fire suppression have caused unnatural fuel buildup in this forest zone."

Schoennagel et al (2004) states: "No evidence suggests that spruce–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 severity of fires in subalpine forests []. We conclude that large, infrequent stand replacing fires are 'business as usual' in this forest type, not an artifact of fire suppression.".

Schoennagel et al (2004) states: "Contrary to popular opinion, previous 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."

Schoennagel et al (2004)states: "Mechanical fuel reduction in subalpine forests would not represent a restoration treatment but rather a departure from the natural range of variability in stand structure."

Schoennagel et al (2004) states: "Given the behavior of fire in Yellowstone in 1988, fuel reduction projects probably will not substantially reduce the frequency, size, or severity of wildfires under extreme weather conditions."

Schoennagel et al (2004) states: "The Yellow-stone fires in 1988 revealed 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 efforts 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 historic range of variability."

Please find Schoennagel et al (2004) attached.

T. Please list each visual quality standard that applies to each unit and disclose whether each unit meets its respective vi- sual quality standard. A failure to comply with visual quality Forest Plan standards violates NFMA.

U. For the visual quality standard analysis please define “ground vegetation,” i.e. what age are the trees, “reestablishes,” “short-term,” “longer term,” and “revegetate.”

V. Please disclose whether you have conduct- ed surveys in the Project area for this Project

for wolverines, pine martins, northern goshawk and lynx as re-quired by the Forest

Plan.

W. Please disclose how often the Project area has been sur-veyed for wolverines, pine mar- tins, northern goshawks, and lynx.

X. Is it impossible for a wolverines, pine mar- tins, northern goshawks, and lynx to inhabit the Project area?

Y. Would the habitat be better for wolverines, pine martins, northern goshawks, and lynx if roads were removed in the Project area?

Z. What is the U.S. FWS position on the impacts of this Project on wolverines, pine mar- tins, northern goshawks, and lynx? Have you conducted ESA consultation?

AA. Please provide us with the full BA for the wolverines, pine martins, northern goshawks, and lynx.

BB. What is wrong with uniform forest conditions?

CC. Has the beetle kill contributed to a diverse landscape?

DD. Why are you trying to exclude stand re- placement fires when these fires help aspen and whitebark pine?

EE. Please disclose what is the best available science for restoration of whitebark pine.

FF. Disclose the level of current noxious weed infestations in the Project area and the cause of those infestations;

GG. Disclose the impact of the Project on noxious weed infestations and native plant communities;

HH. Disclose the amount of detrimental soil disturbance that currently exists in each pro- posed unit from previous logging and grazing activities;

II. Disclose the expected amount of detrimen- tal soil disturbance in each unit after ground disturbance and prior to any proposed mitiga- tion/remediation;

JJ. Disclose the expected amount of detrimen- tal soil disturbance in each unit after proposed mitigation/remediation;

KK. Disclose the analytical data that supports proposed soil mitigation/ remediation mea- sures;

LL. Disclose the timeline for implementation;

MM. Disclose the funding source for non- commercial activities proposed;

NN. Disclose the current level of old growth forest in each third order drainage in the Project area;

OO. Disclose the method used to quantify old growth forest acreages and its rate of error based upon field review of its predictions;

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

QQ. Disclose the level of mature and old growth forest necessary to sustain viable populations of dependent wildlife species in the area;

RR. Disclose the amount of mature and old growth forest that will remain after imple- mentation;

SS. Disclose the amount of current habitat for old growth and mature forest dependent species in the Project area;

TT. Disclose the amount of habitat for old growth and mature forest dependent species that will remain after Project implementation;

UU. 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;

VV. Disclose the amount of big game (moose and elk) hiding cover, winter range, and secu- rity currently available in the area;

WW. Disclose the amount of big game (moose and elk) hi- ding cover, winter range,

and security during Project implementation;

XX. Disclose the amount of big game (moose and elk) hi- ding cover, winter range, and security after implementation;

YY. Disclose the method used to determine big game hiding cover, winter range, and security, and its rate of error as determined by field review;

ZZ. 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

establish a reliable inventory of sensitive species on the Forest;

AAA. Disclose the actions being taken to re- duce fuels on private lands adjacent to the Project area and how those activities/ or lack thereof will impact the efficacy of the activi- ties proposed for this Project;

BBB. Disclose the efficacy of the proposed activities at reducing wildfire risk and severity in the Project area in the future, including a two-year, five- year, ten-year, and 20-year projection;

CCC. Disclose when and how the Bitterroot National Forest made the decision to suppress natural wildfire in the Project area and replace natural fire with logging and pre- scribed burning;

DDD. Disclose the cumulative impacts on the Forest-wide level of the Bitterroot National Forest's policy decision to replace natural fire with logging and prescribed burning;

EEE. Disclose how Project complies with the Roadless Rule;

FFF. Disclose the impact of climate change on the efficacy of the pro- posed treatments;

GGG. Disclose the impact of the proposed project on the carbon storage potential of the area;

HHH. Disclose the baseline condition, and expected sedimentation during and after activities, for all streams in the area;

III. Disclose maps of the area that show the following elements:

1. Past, current, and reasonably foreseeable logging units in the Project area;

2. Past, current, and reasonably foreseeable grazing allotments in the Project area;

3. Density of human residences within 1.5 miles from the Project unit boundaries;

4. Hiding cover in the Project area according to the Forest Plan definition;

5. Old growth forest in the Project area;

6. Big game security areas;

7. Moose winter range;

The best available science, Christensen et al (1993),recom- mends elk habitat effectiveness of 70% in summer range and at least 50% in all other areas where elk are one of the prima- ry resource considerations. According to Figure 1 in Christensen et al (1993), this equates to a maximum road den- sity of approxi- mately 0.7 mi/sq mi. in sum- mer range and approximately 1.7 mi/sq mi. in all other areas.

Do any of the 6th Code watersheds in the Project area meet either of these road density thresholds? It appears the Project area as a whole also far exceeds these thresholds. Please disclose this type of Project level or watershed analysis on road density.

Christensen et al (1993) state that if an area is not meeting the 50% effectiveness threshold of 1.7 mi/sq mi, the agency

should admit that the area is not being man- aged for elk: “Areas where habitat effective- ness is retained at lower than 50 percent must be recognized as making only minor contri- butions to elk management goals. If habitat effectiveness is not important, don't fake it. Just admit up front that elk are not a consid- era- tion.” The Project EIS does not make this ad- mission.

The Forest Service should provide an analysis of how much of the Project area, Project area watersheds, affected land- scape areas, or affected Hunting Districts provide “elk secu- rity area[s]” as defined by the best available science, Christensen et al (1993) and Hillis et al (1991), to be comprised of contiguous 250 acre blocks of forested habitat 0.5 miles or more from open roads with these blocks en- compassing 30% or more of the area.

Please provide a rational justification for the deviation from the Hillis security definition and numeric threshold that re- present the best available science on elk security areas.

We believe that best available science shows that Commercial Logging does not reduce the threat of Forest Fires. What best available science supports the action alternatives?

Please find Schoennagel et al (2004) attached. Schoennagel states: “we are concerned that the model of historical fire effects and 20th-century fire suppression in dry ponderosa pine forests is being applied uncritical- ly across all Rocky Mountain forests, including where it is inappropriate.

Schoennagel et al (2004) states: “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), subalpine fir (Abies lasiocarpa), and lodgepole pine (Pinus contorta), all thin- barked trees ea- sily 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-pressure blocking systems that promote extremely dry regional climate patterns.”

Schoennagel et al (2004) states: “it is unlikely that the short period of fire exclusion has significantly altered the long fire intervals in subalpine forests. Furthermore, large, intense fi- res 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: “Moreover, there is no consistent relationship between time elapsed since the last fire and fuel abundance in subalpine forests, further undermining the idea that years of fire suppression have caused unnatural fuel buildup in this forest zone.”

Schoennagel et al (2004) states: “No evidence suggests that spruce–fir or lodgepole pine forests have experienced sub- stantial shifts in stand structure over recent decades as a re- sult of fire suppression. Overall, variation in climate rather than in fuels appears to exert the largest influence on the size, timing, and severity of fires in subalpine forests []. We conclude that large, infrequent stand replacing fires are ‘business as usual’ in this forest type, not an artifact of fire suppression.”.

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Schoennagel et al (2004)(emphasis added) states: "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."

Schoennagel et al (2004) states: "Given the behavior of fire in Yellowstone in 1988, fuel reduction projects probably will not substantially reduce the frequency, size, or severity

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Likewise, Brown et al (2004) states: "At higher elevations, forests of subalpine fir, Engelmann spruce, mountain hem- lock, and lodgepole or whitebark pine predominate. These forests also have long fire return intervals and contain a high proportion of fire sensitive trees. At periods averaging a few hundred years, extreme drought conditions would prime the- se forests for large, severe fires that would tend to set the forest back to an early successional stage, with a large carry- over of dead trees as a legacy of snags and logs in the regenerating forest . . . . natural ecological dynamics are largely preserved be- cause fire sup- pression has been effective for less than one natural fire cycle. Thinning for restoration does not appear to be appropriate in these forests. Efforts to manipulate stand structures to reduce fire hazard will not only be of limited effectiveness but may also move systems away from pre-1850 conditions to the detriment of wildlife and water- sheds." "Fuel levels may suggest a high fire 'hazard' under conventional assessments, but wildfire risk is typically low in these settings."

Likewise, Graham et al (2004) states: "Most important, the fire behavior characteristics are strikingly different for cold (for ex- ample, lodgepole pine, Engelmann spruce, subalpine fir), moist (for example, western hemlock, western redcedar, western white pine), and dry forests. Cold and moist forests tend to have long fire- return intervals, but fires that do occur tend to be high- intensity, stand-replacing fires. Dry forests historically had short intervals between fi- res, but most important, the fires had low to moderate severity."

According to Graham et al (2004), thinning may also increase the likelihood of wildfire ignition in the type of forests in this Project area: "The probability of ignition is strongly rela- ted to fine fuel moisture content, air temperature, the amount of shading of surface fuels, and the occurrence of an ignition source (human or lightning caused) . . . . There is generally a warmer, dryer microcli- mate in more open stands (fig. 9) compared to denser stands. Dense stands (canopy cover) tend to provide more shading of fuels, keep- ing relative humidity higher and air and fuel temperature lower than in more open stands. Thus, dense stands tend to maintain higher surface fuel moisture contents com- pared to more open stands. More open stands also tend to allow higher wind speeds that tend to dry fu- els compared to dense stands. These factors may in- crease probability of ignition in some open canopy stands com- pared to dense canopy stands."

A new study soon to be published by Dominick A. DellaSala et. al. found that re- viewed 1500 wildfires between 1984 and 2014 found that actively managed forests had the highest level of fire severity. While those forests in protected areas burned, on aver- age, had the lowest level of fire severity. In other words, the best way to reduce severe fires is to protect the land as wilderness, not "manage" it.

The Project will violate the NEPA if there are no valid snag sur- veys done for the project area both within and outside proposed harvest units.

The project will violate the NEPA if there are no valid sur- veys for old growth habitat within each project area, as iden- tified by Green et al. 1992; old growth types need to be defined and quantified by timber types, such as lodgepole pine, Douglas-fir, mixed conifer, spruce, subalpine fir, and limber pine.

The project will likely violate the NEPA if the mitigation measures for MIS, sensitive species, and Montana Species of Concern (birds, mammals including bats) are not clear- ly de- fined, and demonstrated to be effective as per the current best science.

We request a careful analysis of the impacts to fisheries and water quality, including considerations of sedimentation, in- creases in peak flow, channel stability, risk of rain-on- snow events, and increases in stream water temperature. Please disclose the locations of seeps, springs, bogs and other sensitive wet areas, and the effects on these areas of the project activities. Where livestock are permitted to graze, we ask that you assess the present condition and continue to monitor the impacts of grazing activities upon vegetation diversity, soil compaction, stream bank stability and subsequent sedimentation. Livestock grazing occurs in the Project area and causes sediment impacts, trampled or destabilized banks, increased nutrient loads in streams, and decreased density, diversity, and function of riparian vegetation that may lead to in- creased stream temperatures and further detrimental impacts to water quality.

The Project will violate the NEPA if there are no valid snag surveys done for the project area both within and outside proposed harvest units.

The project will violate the NEPA if there are no valid surveys for old growth habitat within each project area, as identified by Green et al. 1992; old growth types need to be defined and quantified by timber types, such as lodgepole pine, Douglas-fir, mixed conifer, spruce, subalpine fir, and limber pine.

The project will likely violate the NEPA if the mitigation measures for MIS, sensitive species, and Montana Species of Concern (birds, mammals including bats) are not clear- ly de- fined, and demonstrated to be effective as per the current best science.

FAILURE TO REVIEW AND PROTECT CULTURAL AND HISTORICAL RESOURCES

Consultation with the State Historic Preservation Office (SHPO) must be completed prior to a decision being signed.

Any required protection measures provided from SHPO will be incorporated into my final decision.

Crucial to the preservation of the historical and cultural foundations of the nation, Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 C.F.R. Part 800 (PDF) (revised August 5, 2004) re- quire Federal agencies to consider the effects of projects they carry out, approve, or fund on historic properties. Additionally, Federal agencies must provide the Advisory Council on Historic Preservation (ACHP) opportunity to comment on such projects prior to the agency's final decision.

A Federal project that requires review under Section 106 is defined as an "undertaking." An undertaking means a project, activity or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval.

Section 110 of the NHPA

Added to the NHPA in 1992, Section 110 requires Federal agencies to emphasize the preservation and enhancement of cultural re- sources. Section 110 directs agencies to initiate measures necessary to direct their policies, plans, and programs in such a way that federally-owned sites, structures, and objects of historical architectural or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the public. The agencies are also encouraged to institute (in consultation with the ACHP) procedures to assure Federal plans and programs contribute to the preservation and enhancement of non-Federally owned sites, structures, and objects of historical, architectural, and archaeological significance. Has the MT SHPO received this survey? The cultural surveys need to be done before the NEPA and NHPA process can be completed, which has not occurred. The project must be approved by the SHPO and the public needs to given a chance to comment on this.

Did the Forest Service conduct NEPA analysis (i.e. an EA or EIS) for the Fire Plan the Forest is using for this project? If you don't the project will be in violation of NEPA, NFMA, and the APA.

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

Since the Forest Service did not conduct NEPA for the Fire Plan, please disclose the cumulative effects of Forest-wide implementation of the Fire Plan in the project EIS, or EA if you refuse to write an EIS, to avoid illegally tiering to a non- NEPA document. Specifically analyze the decision to prioritize mechanical, human-designed, somewhat arbitrary treatments as a replacement for naturally-occurring fire.

Did the Forest Service conduct ESA consultation for the Fire Plan?

Will the Forest Service be considering bind- ing legal standards for noxious weeds in its revision of the Bitteroot Forest Plan?

How effective have BMPs been at stopping (i.e. preventing) new weed infestations from starting during logging and related road operations?

Is it true that new roads are the number one cause of new noxious weed infestations?

Why isn't the Forest Service considering a Forest Plan amendment in this Project to amend the Forest Plan to include binding legal standards that address noxious weeds?

Is it true that noxious weeds are one of the top threats to bio- diversity on our National Forests?

How can the Forest Service be complying with NFMA's requirement to maintain biodiversity if it has no legal standards that address noxious weeds?

Will this Project address all Project area BMP needs, i.e. will the BMP road maintenance backlog and needs from this Project all be met by this Project?

The scoping notice was not clear if any MIS were found. What MIS did you find, how many and how did you look for these MIS?

How will the decreased elk security and thermal cover affect wolverines? Please formally consult with the US FWS on the impact of this project on wolverines. The U.S. District Court ordered the USFWS to reconsider if wolverines should be listed untie ESA. Wolverines need secure habitat in big game winter range.

The scoping notice states that the project will require a project-specific amendment to the forest plan for elk habitat objectives (elk habitat effectiveness, hiding cover and thermal cover), old growth, course woody debris, and snag retention. If you already know this, why are you not sharing more information with the public. You must have already laid out your logging plans. This seems like a violation of NEPA and you have made your decision before you have taken public comment or shared with the public where and how you plan to log the project area.

How can you legally decide that you are not going to follow the forest plan without considering the impact of the proposal to

Amed the forest plan on big game, bull trout and other fish, lynx, wolverine, whitebark pine and grizzly bears?

Since the agency is proposing to amend the Forest Plan, the public needs to be provided information as to how this standard has been implemented over the planning period, and if there are significant cumulative effects already from a failure to provide 25% thermal cover on elk and mule deer winter ranges. The EA at appendix D-6 notes that there have been 9 previous Forest Plan amendments for thermal cover. There is no actual information as to where these previous amendments were implemented, or how they affected big game quality of winter range. This type of information is needed for the agency to define the significance of the currently-proposed amendment. It is also key to the claim being made by the agency that forage, not thermal cover, is lacking on big game winter range.

Violation of the NEPA

This proposal is a violation of the NEPA because there has been no "hard look" at how the proposed vegetation treatments and roads will impact other resources, including wildlife. Currently, there have been no inventories for key wildlife habitats, including snag forests, old growth forests, hiding cover, open road densities, elk and mule deer thermal cover on winter ranges, or elk security, for example. The status of Forest MIS and sensitive species in the project area appears unknown, as there have been no surveys at this time. Since the current conditions for wildlife and their habitat are unknown for the project area, the impacts of vegetation treatments and roads cannot be assessed. In addition, none of the proposed treatments have been defined as well, except for vague descriptions of the acres that may be treated by various measures. So the manner in which wildlife habitat, currently undefined, will change with the proposed project cannot be measured as well.

An article in the Bitterroot Star reports the following:

[Stevensville District Ranger Steve Brown] also said that in the Forest's 1994 monitoring report, it states that the Forest Plan standards adopted in 1987 are not the best available science, making it difficult if not impossible to measure and that the Forest should be using 'Green. et al'.

"I believe the language used actually said that we should amend our Forest Plan to include Green. et al.." said Brown.

He said the Forest went on to use 'Green. et al' for the next 26 years but did not bother to amend the Forest Plan to say that Green. et al. would be used to define old growth.

“Then these groups sued us, complaining that we were not following the Forest Plan,” said Brown. “We took a look at it and said, hey, they are right . . . ."

The article continues: “The solution, according to Brown, will be to adopt a project specific amendment to the Forest Plan for the Gold Butterfly

Similarly, an article in the Ravalli Republic quotes the District Ranger as stating: “When it came out in the complaint that we were not using the standards found the Forest Plan, we took a look and saw that was right.” In the interview, the District Ranger again concedes that the violation has been occurring for the past 26 years. The article further quotes the Bitterroot Forest Supervisor as stating: “Upon further review of the project analysis, we recognized some deficiencies regarding Forest Plan compliance.”

This same statement was made in an agency press release.

Other Ongoing Projects

Although the Forest Service has now withdrawn the Gold Butterfly Project decision, there are a number of other ongoing projects on the Bitterroot National Forest that have not been withdrawn. There is no publicly available list that indicates which projects are currently being implemented on the Bitterroot National Forest. Thus, the projects discussed below are not intended to be a complete list, but rather a representative sample.

In May 2020, the Forest Service signed a decision authorizing the Piquet Creek Project. Ex.10 at pdf-30. The project allows approximately 3,000 acres of commercial logging. Ex.10 at pdf-21. The agency's response to scoping

comments states: There is no proposal to remove any old growth stand from old growth status, as defined by Green et al. 1992 (amended 2005). Treatments may be proposed to reduce competition and ingrowth to create a more resilient and resistant stand to insects, disease and wildfire that would protect and aid in managing these stands for old growth into the future. Old growth data will be collected where appropriate to determine if stands qualify based on the Green et al. definition and ensure we're meeting the Forest Plan.

Thus, the agency did not use the Forest Plan old growth definition to calculate existing old growth in the project area, and the project permits logging in old growth to a level that would not comply with the Forest Plan old growth definition. Nonetheless, the Forest Service exempted this project from NEPA analysis and the administrative objection process purportedly because it was complying with the Healthy Forest Restoration Act categorical exclusion mandate "to maximize retention of old-growth and large trees as appropriate." However, logging down to 8 large trees per acre and 33% canopy closure under Green et al. – instead of retaining at least 15 large trees per acre and 75% canopy closure as required by the Forest Plan – does not maximize old-growth and large trees but rather minimizes them.

Similarly, in April 2020, the Forest Service signed a decision authorizing the Buckhorn Project. The project allows approximately 1,165 acres of commercial logging. The Forest Service states:

"Most treatment units do not contain old growth stands as defined by Green et al. 1992 (amended 2005)." For example, in Unit 14, "trees >20" DBH in one stand did not meet age requirements based on Green et al. 1992 (amended 2005) for the habitat type. "Age requirements are 170 years or older . . . ." In contrast to Green et al., however, the Forest Plan old growth definition does not have an age minimum; thus, this stand would likely have been protected as old growth under the Forest Plan.

Moreover, the Forest Service states: "Treatments within all units would retain large, old ponderosa pine and thus would not reduce the old growth percentage for this third order drainage." This statement is premised upon retention in accordance with the Green et al., which only requires retention of 8 large trees per acre, whereas the Forest Plan definition requires 15 large trees per acre and 75% canopy closure. Thus, existing Forest Plan old growth may be logged by this Project down to conditions that no longer constitute Forest Plan old growth big game habitat objectives, and course woody debris.

Since the Bitterroot National Forest has not been following the old growth requirements of the Forest Plan, the Bitterroot N.F. must amend the Forest Plan not do a site specific amendment since the Bitterroot N.F. has not been complying with the Forest Plan and clearly does not intend to in the future. The other option is to follow the Forest Plan.

Please have an alternative that follows the Forest Plan.

The Forest Service'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, violates NFMA, NEPA, and the APA.

The Forest Service's failure to use the Forest Plan definition of elk habitat objectives, and consequent failures to demonstrate compliance with Forest Plan elk habitat objectives, violates NFMA, NEPA, and the APA.

The Forest Service's failure to use the Forest Plan definition of course woody debris, and consequent failures to demonstrate compliance with Forest Plan course woody debris standard, violates NFMA, NEPA, and the APA.

The Forest Service's failure to follow the Forest Plan standards for snag retention and consequent failures to demonstrate compliance with Forest Plan snag retention standards violates NFMA, NEPA, and the APA.

Which wildlife species and ecosystem processes, if any, does the fire-proofing in the proposed project benefit? Which species and processes do fire-proofing harm?

What is your definition of healthier?

What evidence do you have that this logging will make the forest healthier for fish and wildlife? What about the role of mixed severity and high severity fire – what are the bene- fits of those natural processes?

How have those processes (mixed and high severity fire) created the ecosystems we have today?

Over how many millennia have mixed and high severity fire have been occurring with- out human intervention?

What beneficial ecological roles do beetles play? You didn't answer this in violation of NEPA, NFMA and the APA.

Can the forest survive without beetles?

Will all WQLS streams in the project area have completed TMDLs before a decision is signed?

Will this project leave enough snags to follow the Forest Plan requirements and the requirements of sensitive old growth species such as flammulated owls and goshawks?

Will this Project exacerbate existing noxious weed infestations and start new infestations?

Do unlogged old growth forests store more carbon than the wood products that would be removed from the same forest in a logging operation?

What is the cumulative effect of National Forest logging on U.S. carbon stores? How many acres of National Forest lands are logged every year? How much carbon is lost by that logging?

Is this Project consistent with "research recommendations (Krankina and Harmon 2006) for protecting carbon gains against the potential impacts of future climate change? That study recommends "[i]ncreasing or maintain- ing the forest area by avoiding deforestation," and states that "protecting forest from logging or clearing offer immediate benefits via pre- vented emissions."

Please see the attached paper, **Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good**

WilliamR.Moomaw[1],SusanA.Masino[2,3] andEdwardK.Faison[4]*

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https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full

"In sum, proforestation provides the most effective solution to dual global crises—climate change and biodiversity loss. It is the only practical, rapid, economical, and effective means for atmospheric CDR among the multiple options that have been proposed because it removes more atmospheric carbon dioxide in the immediate future and continues to sequester it long-term."

Please list each visual quality standard that applies to each unit and disclose whether each unit meets its respective visual quali- ty stan- dard.

Please disclose whether you have conducted surveys in the Project area for this Project for whitebark pine, wolverines, lynx, grizzly bears, pine martins, and northern goshawk, as required by the Forest Plan.

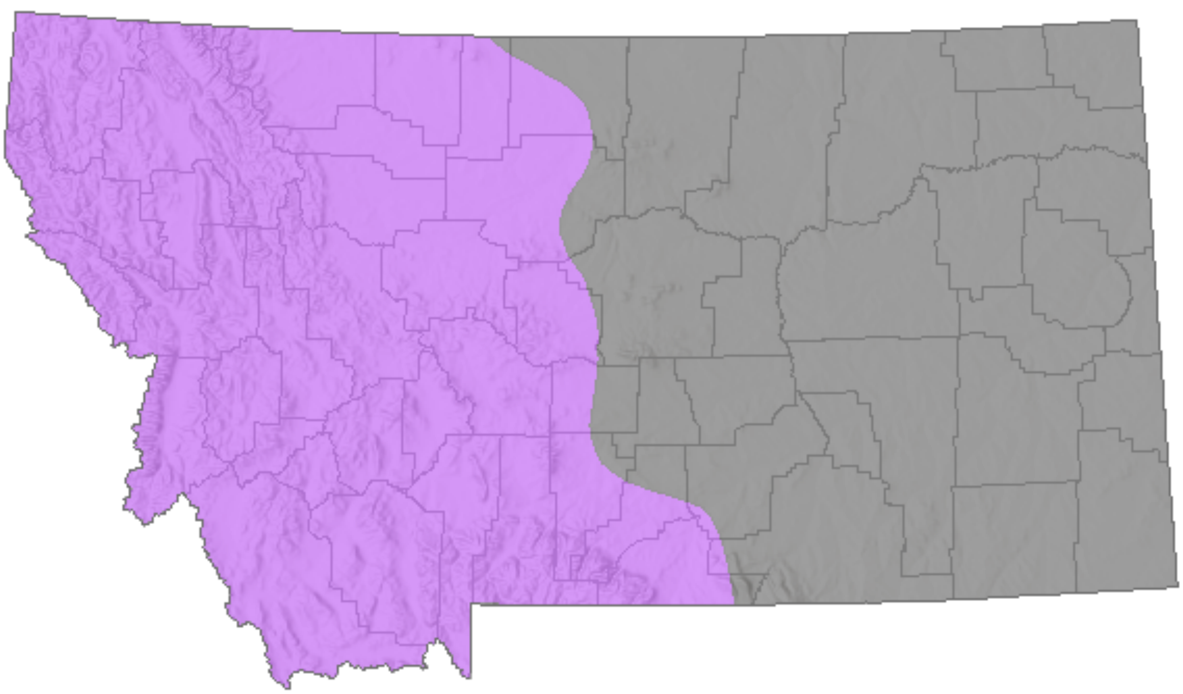
Please disclose the last time the Project area was surveyed for whitebark pine, bull trout, wolverines, pine martins, northern goshawk, grizzly bears, and lynx.

Please disclose how often the Project area has been surveyed for whitebark pine, grizzly bears, bull trout, wolverines, pine mar- tins, northern goshawks, and lynx.

Would the habitat be better for bull trout, grizzly bears, white-bark pine, wolverines, pine martins, northern goshawks, and lynx if roads were removed in the Project area?

Please provide us with the full BA for the bull trout, grizzly bears, whitebark pine, wolverines, pine martins, northern goshawks, and lynx.

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



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

As of 2018, an article in the July/August 2020 issue of Montana Outdoors, the Montana Fish Wildlife and Parks magazine included a map showing the distribution of verified and possible grizzly bear locations. This map includes 5 verified grizzly bear sightings only about 10 miles east of the Project area(verified since 2005) and 2 possible sightings since 2011.

https://issuu.com/montanaoutdoors/docs/outlierbears

It is clearly possible that grizzly bears are also present in the Bitterroot Front landscape in the last 3 years.

Please incorporate this into your analysis.

Please formally consult with the U.S. Fish and Wildlife Service on the impact of the Bitterroot Front project on grizzly bears.

Please see the attached paper by Dr. David Mattson, "Grizzly Bears for the Selway-Bitterroot." It recommends:) "Permanent and meaningful protection of Inventoried Roadless Areas; (ii) Road closures and permanent road retirement; (iii) Retirement of grazing allotments; (iv) Improved husbandry on allotments; (v) Increased law enforcement…"

The Interagency Grizzly Bear Guidelines (IGBC 1986)

document directs the FS to manage for "multiple land use benefits" to the extent that these uses are compatible with grizzly recovery.

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

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

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

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

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

Weeds

Native plants are the foundation upon which the ecosystems of the Forest are built, providing forage and shelter for all native wildlife, bird and insect species, supporting the natural processes of the landscape, and providing the context within which the public find recreational and spiritual opportunities. All these uses or values of land are hindered or lost by con- version of native vegetation to invasive and noxious plants. The ecological threats posed by noxious weed infestations are so great that a former chief of the Forest Service called the invasion of noxious weeds “devastating” and a “biological disaster.” Despite implementation of Forest Service “best management practices” (BMPs), noxious weed infestation on the Forest is getting worse and noxious weeds will likely overtake native plant populations if introduced into areas that are not yet infested. The Forest Service has recognized that the effects of noxious weed invasions may be irreversible. Even if weeds are eliminated with herbicide treatment, they may be replaced by other weeds, not by native plant species.

Invasive plant species, also called noxious weeds, are one of the greatest modern threats to biodiversity on earth. Noxious weeds cause harm because they displace native plants, resulting in a loss of diversity and a change in the structure of a plant community. By re- moving native vegetative cover, invasive plants like knapweed may increase sediment yield and surface runoff in an ecosystem. As well knapweed may alter organic matter dis- tribution and nutrient through a greater ability to uptake phosphorus over some native species in grasslands. Weed colonization can alter fire behavior by increasing flammability: for example, cheatgrass, a widespread noxious weed on the Forest, cures early and leads to more frequent burning. Weed colonization can also deplete soil nutrients and change the physical structure of soils.

The Forest Service's own management activities are largely responsible for noxious weed infestations; in particular, logging, pre- scribed burns, and road construction and use create a risk of weed infestations. The introduction of logging equipment into the Forest creates and exacerbates noxious weed infestations. The removal of trees through logging can also facilitate the establishment of noxious weed infestations be- cause of soil disturbance and the reduction of canopy closure In general, noxious weeds occur in old clearcuts and forest openings, but are rare in mature and old growth forests. Roads are of- ten the first place new invader weeds are introduced. Vehicle traffic and soil disturbances from road construction and maintenance create ideal establishment conditions for weeds. Roads also provide obvious dispersal corridors. Roadsides throughout the project area are infested with noxious weeds. Once established along roadsides, invasive plants will likely spread into adjacent grass- lands and forest openings.

Prescribed burning activities within the analysis area would likely cumulatively contribute to increases to noxious weed distribution and populations. As a disturbance process, fire has the potential to greatly exacerbate infestations of certain noxious weed species, depending on burn severity and habitat type (Fire Effects Information System 2004). Soil disturbance, such as that resulting from low and moderate burn severities from prescribed fire and fire suppression related disturbances (dozer lines, drop spots, etc.), provide optimum conditions for noxious weed invasion. Dry site vegetation types and road corridors are extremely vulnerable, especially where recent ground disturbance (timber management, road construction) has occurred. Units proposed for burning within project area may have closed forest service access roads (jammers) located within units. These units have the highest potential for noxious weed infestation and exacerbation

through fire activities. Please provide an alternative that eliminates units that have noxious weeds present on roads within units from fire management proposals.

Please address the ecological, social and ascetic impact of current noxious weed infestations within the project area. Include an analysis of the impact of the actions proposed by this project on the long and short term spread of current and new noxious weed infestations. What treatment methods will be used to address growing noxious weed problems? What noxious weeds are currently and historically found within the project area? Please include a map of current noxious weed infestations which includes knapweed, Saint Johnswort, cheat grass, bull thistle, Canada thistle, hawkweed, hound's- tongue, oxeye daisy and all other Category 1, Category 2 and Category 3 weeds classified as noxious in the MONTANA COUNTY NOXIOUS

WEED LIST. State-listed Category 2 noxious weed species yellow and orange hawkweeds are recently established (within the last 5 to 10 years) in Montana and are rapidly expand- ing in established areas. They can invade undisturbed areas where native plant communities are intact. These species can persist in shaded conditions and of- ten grow under- neath shrubs making eradication very difficult. Their stoloniferous (growing at the surface or below ground) habit can create dense mats that can persist and spread to densities of 3500 plants per square mile (Thomas and Dale 1975). Are yellow and orange hawk- weeds present within the project area?

Please address the cumulative, direct and in- direct effects of the proposed project on weed introduction, spread and persistence that includes how weed infestations have been and will be influenced by the following management actions: road construction including new permanent and temporary roads and skid trails proposed within this project; opening and decommissioning of roads represented on forest service maps; ground disturbance and traffic on forest service template roads, min- ing access routes, and private roads; removal of trees through commercial and pre-commercial logging and understory thinning; and pre-scribed burns. What open, gated, and de-commissioned Forest Service roads within the project area proposed as haul routes have existent noxious weed populations and what methods will be used to assure that noxious weeds are not spread into the pro-posed action units?

Noxious weeds are not eradicated with single herbicide treat-ments. A onetime application may kill an individual plant but dormant seeds in the ground can still sprout after herbicide treatment. Thus, herbicides must be used on consistent, repeti-tive schedules to be effective.

What commitment to a long-term, consistent strategy of ap- pli-cation is being proposed for each weed infested area wi- thin the proposed action area? What long term monitoring of weed populations is proposed?

When areas treated with herbicides are re- seeded on national forest land, they are usually reseeded with exotic grasses, not native plant species. What native plant restoration activities will be implemented in areas disturbed by the actions proposed in this project? Will disturbed areas including road corridors, skid trails, and burn units be planted or reseeded with native plant species?

The scientific and managerial consensus is that prevention is the most effective way to manage noxious weeds. The Forest

Service concedes that preventing the introduction of weeds into un-infested areas is "the most critical component of a weed management program." The Forest Service's national management strategy for noxious weeds also recommends "develop[ing] and implement[ing] forest plan standards . . . ." and recognizes that the cheapest and most effective solution is prevention. Which units within the project area currently have no noxious weed populations within their boundaries? What minimum standards are in the Bitterroot National Forest Plan to address noxious weed infestations? Please include an alternative in the DEIS that includes land management standards that will prevent new weed infestations by addressing the causes of weed infestation. The failure to include preventive standards violates NFMA because the Forest Service is not ensuring the protection of soils and native plant communities. Additionally, the omission of an EIS alternative that includes preventive measures would violate NEPA because the Forest Service would fail to consider a reasonable alternative.

Rare Plants

The ESA requires that the Forest Service con- serve endangered and threatened species of plants as well as animals. In addition to plants protected under the ESA, the Forest Service identifies species for which population viability is a concern as "sensitive species" designated by the Regional Forester (FSM 2670.44). The response of each of the sensitive plant species to management activity varies by species, and in some cases, is not fully known. Local native vegetation has evolved with and is adapted to the climate, soils, and natural processes such as fire, in- sect and disease infestations, and windthrow. Any management or lack of management that causes these natural processes to be altered may have impacts on native vegetation, including threatened and sensitive plants. Herbicide application – intended to eradicate invasive plants – also results in a loss of native plant diversity because herbicides kill native plants as well as invasive plants.

Whitebark Pine

Not all ecosystems or all Rocky Mountain landscapes have experienced the impacts of fire exclusion. In some wilder- ness areas, where in recent decades natural fires have been allowed to burn, there have not been major shifts in vegetation composition and structure (Keane et al. 2002). In some alpine ecosystems, fire was never an important eco- logical factor. In some upper subalpine ecosystems, fires were im- portant, but their rate of occurrence was too low to have been significantly altered by the relatively short period of fire suppression (Keane et al. 2002).

For example, the last 70 to 80 years of fire suppression have not had much influence on subalpine landscapes with fire intervals of 200 to several hundred years (Romme and Despain).

Consequently, it is unlikely that fire exclusion has yet to significantly alter stand conditions or forest health within Rocky Mountain sub- alpine ecosystems.

Whitebark pine seedlings, saplings and mature trees, present in subalpine forests pro- posed for burning, would experience mortality from project activity. Whitebark pine is fire intolerant (thin bark). Fire favors whitebark pine regeneration (through canopy opening and reducing competing vegetation) only in the presence of adequate seed source and dispersal mechanisms (Clarks Nutcracker or humans planting white- bark pine seedlings).

White pine blister rust, an introduced disease, has caused ra- pid mortality of whitebark pine over the last 30 to 60 years. Keane and Arno (1993) reported that 42 percent of whitebark pine in western Montana had died in the previous 20 years with 89 percent of remaining trees being infected with blister rust. The ability of whitebark pine to reproduce naturally is strongly affected by blister rust infection; the rust kills branches in the upper cone bearing crown, effectively ending seed production.

Montana is currently experiencing a mountain pine beetle epidemic. Mountain pine beetle prefer large, older whitebark pine, which are the major cone producers. In some areas the few remaining whitebark that show the potential for blister rust resistance are being at- tacked and killed by mountain pine beetles, thus accelerating the loss of key mature cone- bearing trees.

Whitebark pine seedlings and saplings are very likely present in the subalpine forests proposed for burning and logging. In the ab- sence of fire, this naturally occurring white- bark pine re- generation would continue to function as an important part of the subalpine ecosystem. Since 2005, rust resistant seed sources have been identified in the Northern Rockies (Mahalovich et al 2006). Due to the severity of blister rust infection within the re- gion, natural whitebark pine regeneration in the project area is prospective rust resistant stock.

Although prescribed burning can be useful to reduce areas of high-density subalpine fir and spruce and can create favora- ble ecological conditions for whitebark pine regeneration and growth, in the absence of sufficient seed source for natural re- generation maintaining the viability and function of whitebark pine would not be achieved through burning.

Planting of rust- resistant seedlings would likely not be sufficient to replace whitebark pine lost to fire activities.

What surveys have been conducted to deter-]mine presence and abundance of whitebark pine regeneration? If whitebark pine seedlings and saplings are present, what measures will be taken to protect them? Please include an alternative that excludes burning in the presence of whitebark pine regeneration (consider 'Daylighting' seedlings and saplings as an alternative restoration method). Will restoration efforts include planting whitebark pine? Will planted seedling be of rust resistant stock? Is rust resistant stock available? Would enough seedlings be planted to replace whitebark pine lost to fire activities? Have white pine blister rust surveys been accomplished? What is the severity of white pine blister rust in proposed action areas?

The NEPA requires a "hard look" at climate issues, including cumulative effects of the "treatments" in the proposed project when added to the heat, drought, wind and other impacts associated with increased 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 "the human environment." Climate risk presents important adverse impacts on cultural, economic, environmental, and social aspects of the human environment. – people, jobs, and the economy – adjacent to and near the project area. "Challenges in predicting responses of individual tree species to climate are a result of species competing under a never-before-seen climate regime – one forests may not have experienced before either.

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

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

Stands are at risk of going from forest to non-forest, even without the added risk of "management" as proposed in the project area.

The Bitterroot National Forest has not yet accepted that the effects of climate risk represent a significant issue, and eminent loss of forest resilience already, and a significant and growing risk into the "foreseeable future?"

It is now time to speak honestly about unrealistic expectations relating to desired future condition. Forest managers have failed to disclose 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's levels of concentration in the atmosphere. (See attached map). This cumulative ("reasonably foreseeable") 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 irreversible which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section 7; 50 CFR §§402.9, 402.14). All net carbon emissions from logging represent “irretrievable and irreversible commitments of resources.”

It is clear that the management of the planet’s forests is a nexus for addressing this largest crisis ever facing humanity. Please analysis agency-caused CO_2 emissions or consider the best available science on the topic. In an EIS, please provide information on climate change effects on project area vegetation. The scoping notice provides no analysis as to the veracity of the project’s Purpose and Need, the project’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.

Please consider that the effects of climate change on the project area, including that the “desired” condition. Please provide a credible analysis as to how realistic and achievable its desired conditions are in the context of a rapidly changing climate, along an unpredictable but changing trajectory.

The Forest Plan does not provide meaningful direction on climate change. Please acknowledge the pertinent and highly relevant best available science on climate change. If this is not done the project will be in violation of NEPA.

Please analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. Please provide estimates of the total amount of carbon dioxide (CO_2) or other greenhouse gas emissions caused by FS management actions and policies—forest-wide, regionally, or nationally. The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO_2.

In an EIS please 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 various types of vegetation cover found on the GNF.

Please do not ignore CO_2 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. In the past, The FS simply ignoring 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 "Benefits people obtain from ecosystems, including: (2) Regulating services, such as long term storage of carbon; climate regulation..."

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

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

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

Forest managers must analyze and disclose the fact that the Bitterroot National Forest can no longer "insure that timber will be harvested from the National Forest system lands only where… there is assurance that such lands can be restocked within five years of harvest?" (NFMA§6(g)(3)(E)(ii)).

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

"At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed these thresholds, such that conditions have become increasingly unsuitable for regeneration. High fire severity and low seed availability further reduced the probability of post-fire regeneration. Together, our results demonstrate that climate change combined with high

severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States." Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration, PNAS (2018), Kimberley T. Davis, et al. (Please, find attached)

Forests are already experiencing emissions-driven deforestation on both the post-fire and post-logging acreage. Areas where the cumulative 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 – all characteristic of a less "resilient" forest.

"In the US Rocky Mountains, we documented a significant trend of post-fire tree regeneration, even over the relatively short period of 23 years covered in this analysis. Our findings are consistent with the expectation of reduced resilience of forest ecosystems to the combined impacts of climate warming and wildfire activity. Our results suggest that predicted shifts from forest to non-forested vegetation." Evidence for declining forest resilience to wildfires under climate change, Ecology Letters, (2018) 21: 243–252, Stevens-Rumens 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 demonstrates a change of course is critical. It is time to take a step back, assess the present and future and make the necessary adjustments, all in full public disclosure to the Congress and the American people. Many acres of (conifers) In many areas, conifers haven't shown "resilience" 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. A full discussion and disclosure of the following is required: 1) trends in wildfires, insect activity and tree mortality, 2) past regeneration success/failure in the project area, and 3) climate-risk science – some of which is cited below.

Hayward, 1994 essentially calls into question the entire manipulate and control regime, as represented in the EA. The managed portion of the Lewis and Clark National Forest has been fundamentally changed, as has the climate, so the Forest Service must analyze how much land has been fundamentally changed forest wide compared to historic conditions, and disclose such information to the public in the context of an EIS by completing the Forest Plan Revision process.

Published scientific reports indicate that climate change will be exacerbated by logging, and that climate change will lead to increased wildfire severity (including drier and warmer conditions that may render obsolete the proposed effects of the Project). The former indicates that the Bitterroot Front Project may have a significant adverse effect on the environment, and the latter undermines the central underlying purpose of the Project. Therefore, the Forest Service must candidly disclose, consider, and fully discuss the published scientific papers discussing climate change in these two contexts. At least the Forest Service should discuss the following studies:"

Depro, Brooks M., Brian C. Murray, Ralph J. Alig, and Alyssa Shanks. 2008.

Public land, timber harvests, and climate mitigation: quantifying carbon sequestration potential on U.S. public timberlands. Forest Ecology and Management 255: 1122-1134.

Harmon, Mark E. 2001. Carbon sequestration in forests: addressing the scale question. Journal of Forestry 99:4: 24-29.

Harmon, Mark E, William K. Ferrell, and Jerry F. Franklin. 1990. Effects of carbon storage of conversion of old-growth forest to young forests. Science 247: 4943: 699-702

Harmon, Mark E, and Barbara Marks. 2002. Effects of silvicultural practices on carbon stores in Douglas-fir – western hemlock forests in the Pacific Northwest, USA: results from a simulation model. Canadian Journal of Forest Research 32: 863-877.

Homann, Peter S., Mark Harmon, Suzanne Remillard, and Erica A.H. Smithwick.2005. What the soil reveals: potential total ecosystem C stores of the Pacific Northwest region, USA. Forest Ecology and Management 220: 270-283.

McKenzie, Donald, Ze'ev Gedalof, David L. Peterson, and Philip Mote. 2004. Climatic change, wildfire, and conservation. Conservation Biology 18:4: 890 -902.

Please include an alternative which would implement prescribed fire fuels treatments that does not include removal of commercial wood products. Please include an alternative that considers the long-term cumulative impacts of its industrial logging on climate change."

This important consideration could lead land managers and policy makers to the conclusion that National Forest lands are more valuable to the national and global community as carbon sinks than as commercial tree farms.

The Forest Service must analyze all of the cumulative the impacts of the Bitterroot Front project in an EIS. The project will be in violation of NEPA, NFMA, the Forest Plan and the APA if this is not done.

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

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

The regulations shall include, but not be limited to-

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

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

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

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

(a) Resource protection. All management prescriptions shall—

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

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

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

The project-level, and programmatic-level (Forest Plan) fail to publicly disclose the current and future impacts of climate risk to our national forests. NEPA requires cumulative effects analysis at the programmatic level, and at the project-level. 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/scenario 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's poor history of restocking success and its failure to employ the best available science, the adequacy of the site-specific and programmatic NEPA/NFMA process begs for further analysis and disclosure of the reality of worsening climate conditions which threaten – directly and cumulatively – to turn forest into non-forested 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 adjustments, all in full public disclosure to the Congress and the American people.

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

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

Excerpt:

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

When replanting a forest after disturbances, does it make sense to try to reestablish what was there before? Or, should we find re-plant material that might

be more appropriate to current and future conditions of a changing environment?

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

"This may no longer be the case."

The 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 program. 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 leasing, officials must consider emissions from past, present and foreseeable future oil and gas leases nationwide. The case was brought by WildEarth Guardians and Physicians for Social Responsibility.

In March of 2018 the Federal District Court of Montana found the Miles City (Montana) and Buffalo (Wyoming) Field Office's Resource Management Plans unlawfully overlooked climate impacts of coal mining and oil and gas drilling. The case was brought by Western Organization of Resource Councils, Montana Environmental Information Center, Powder River Basin Resource Council, Northern Plains Resource Council, the Sierra 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.

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

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

"What's striking is if you asked scientists two decades ago how climate warming would play out, this is what they expected we'd see," Higuera said. "And now we're starting to see those predictions on the impact to ecosystems play out."

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

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

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

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

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

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

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

The study overturns some common assumptions of post-fire recovery. Many historic analyses of mountain forests show the hillsides used to hold far fewer trees a century ago, and have become overstocked due to the efforts humans put at controlling fire in the woods. Higuera explained that some higher elevation forests are returning to their more sparse historical look due to increased fires.

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

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

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

terns 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.

Please find attached the paper by Davis et al. that the Missoulian refers to: "Wildfires and climate change push low-elevation forests across a critical climate threshold for tree regeneration

Kimberley T. Davis, Solomon Z. Dobrowski, Philip E. Higuera, Zachary A. Holden, Thomas T. Veblen, Monica T. Rother, Sean A. Parks, Anna Sala, and Marco P. Maneta"

"Abstract

Climate change is increasing fire activity in the western United States, which has the potential to accelerate climate-induced shifts in vegetation communities. Wildfire can catalyze vegetation change by killing adult trees that could otherwise persist in climate conditions no longer suitable for seedling establishment and survival. Recently documented declines in post-fire conifer recruitment in the western United States may be an example of this phenomenon. However, the role of annual climate variation and its interaction with long-term climate trends in driving these changes is poorly resolved. Here we examine the relationship between annual climate and post-fire tree regeneration of two dominant, low-elevation conifers (ponderosa pine and Douglas-fir) using annually resolved establishment dates from 2,935 destructively sampled trees from 33 wildfires across four regions in the western United States. We show that regeneration had a nonlinear response to annual climate conditions, with distinct thresholds for recruitment based on vapor pressure deficit, soil moisture, and maximum surface temperature. 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 regeneration. High fire severity and low seed availability further reduced the probability of post-fire regeneration. Together, our results demonstrate that climate change combined with high severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States."

The Forest Service did not prepare a biological assessment for wolverine for the project. Instead, the Forest Service produced regional guidance for all of the National Forests in Forest Service Region One/Northern Region that directs agency biologists not to provide an analysis of wolverine jeopardy in project biological assessments, and not to provide any such analysis to FWS for a concurrence.

In its Order dated 4/4/16, the U.S. District Court of Montana ruled: “The United States Fish & Wildlife Service's Withdrawal of its Proposed Rule to list the distinct population segment of the North American wolverine occurring in the contiguous United States as a threatened species under the Endangered Species Act, 79 Fed. Reg. 47,522 (Aug. 13, 2014), is hereby VACATED.” Therefore the status of the wolverine is Proposed for listing under the ESA, and the FS must undergo formal consultation with the U.S. Fish & Wildlife Service.

Wolverines use habitat ranging from Douglas-fir and lodgepole pine forest to subalpine white-bark pine forest (Copeland et al., 2007). Lofroth (1997) in a study in British Columbia, found that wolverines use habitats as diverse as tundra and old-growth forest. Wolverines are also known to use mid- to low-elevation Douglas-fir forests in the winter (USDA Forest Service, 1993).

Aubry, et al. 2007 note that wolverine range in the U.S. had contracted substantially by the mid- 1900s and that extirpations are likely due to human-caused mortality and low to nonexistent immigration rates.

May et al. (2006) cite: “Increased human development (e.g. houses, cabins, settlements and roads) and activity (e.g. recreation and husbandry) in once remote areas may thus cause reduced ability of wolverines to perform their daily activities unimpeded, making the habitat less optimal or causing wolverines to avoid the disturbed area (Landa & Skogland 1995, Landa et al. 2000a).”

Ruggiero, et al. (2007) state: “Many wolverine populations appear to be relatively small and isolated. Accordingly, empirical information on the landscape features that facilitate or impede immigration and emigration is critical for the conservation of this species.”

Ruggiero et al. (1994b) recognized that “Over most of its distribution, the primary mortality factor for the wolverines is trapping.” Those authors also state, “Transient wolverines likely play a key role in the maintenance of spatial organization and the colonization of vacant habitat. Factors that affect movements by transients may be important to population and distributional dynamics.”

Roads and human density are important factors influencing current wolverine distribution (Carroll et al. 2001b); and wolverine habitat selection is negatively correlated with human activity – including roads (Krebs et al. 2007). Wolverine occurrence has shown a negative relationship with road densities greater than 2.8 mi/mi^2 (1.7 km/km^2) (Carroll et al. 2001b).

(T)he presence of roads can be directly implicated in human-caused mortality (trapping) of this species. Trapping was identified as the dominant factor affecting wolverine survival in a Montana study (Squires et al. 2007).

Krebs et al. (2007) state, “Human use, including winter recreation and the presence of roads, reduced habitat value for wolverines in our studies.”

Wisdom et al. (2000) state:
Carnivorous mammals such as marten, fisher, lynx, and wolver-

ine are vulnerable to over- trapping (Bailey and others 1986, Banci 1994, Coulter 1966, Fortin and Cantin 1994, Hodgman and others 1994, Hornocker and Hash 1981, Jones 1991, Parker and others 1983, Thompson 1994, Witmer and others 1998), and over-trapping can be facilitated by road access (Bailey and others 1986, Hodgman and others 1994, Terra-Berns and others 1997, Witmer and others 1998).

...Snow-tracking and radio telemetry in Montana indicated that wolverines avoided recent burns (Hornocker and Hash 1981).

Copeland (1996) found that human disturbance near natal denning habitat resulted in immediate den abandonment but not kit abandonment. Disturbances that could affect wolverine are heli-skiing, snowmobiles, backcountry skiing, logging, hunting, and summer recreation (Copeland 1996, Hornocker and Hash 1981, ICBEMP1996f). Please find Hornocker attached.

Carroll et al. (2001b) state:
The combination of large area requirements and low reproductive rate make the wolverine vulnerable to human-induced mortality and habitat alteration. Populations probably cannot sustain rates of human-induced mortality greater than 7–8%, lower than that documented in most studies of trapping mortality (Banci 1994, Weaver et al. 1996).

... (T)he present distribution of the wolverine, like that of the grizzly bear, may be more related to regions that escaped human settlement than to vegetation structure.

Wisdom et al. (2000) offered the following strategies:

- Provide large areas with low road density and minimal human disturbance for wolverine
  and lynx, especially where populations are known to occur. Manage human activities and
  road access to minimize human disturbance in areas of known populations.

- Manage wolverine and lynx in a metapopulation context, and provide adequate links
  among existing populations.

- Reduce human disturbances, particularly in areas with known or high potential for
  wolverine natal den sites (subalpine talus cirques).

- Please consider and use the best available science and insure population viability as required by NFMA. Please follow NEPA's requirements that the FS demonstrate scientific integrity. See 36 C.F.R. 219.3; 40 C.F.R. 1502.24.
  The FS fails to set meaningful thresholds and assumes that project-caused habitat losses are insignificant. Of such analyses, Schultz (2010) concludes that "the lack of management thresholds allows small portions of habitat to be eliminated incrementally without any signal when the loss of habitat might constitute a significant cumulative impact." In the absence of meaningful thresholds of habitat loss and no monitoring of wolverine populations at the For-

est level, projects will continue to degrade wolverine habitat across the BNF over time.

The project is in violation of the Roadless Rule, NEPA, NFMA and the APA. The project is harming habitat for threatened and proposed species and there is not a risk of uncharacteristic wildfire effects since the area burned in 1988.

Exception (b)(1) allows timber sales to go forward if they are generally limited to small diameter trees. However, this (b)(1) exception notably appears to contradict maintaining roadless characteristics, as it allows the very activity that the Forest Service also states is likely to degrade roadless characteristics. Nonetheless, in enumerating these exceptions, the Forest Service explicitly noted that the "cutting, sale, or removal of timber in these areas is expected to be infrequent." (Roadless Area Conservation Rule, 66 Fed. Reg. 3,244, 3,273 (Jan. 12, 2001) (§ 294.13(b)).)

The roadless areas in the project area would be designated as wilderness under the Northern Rockies Ecosystem Protection Act, H.R. 1321: https://www.congress.gov/bill/116th-congress/house-bill/1321?q=%7B%22search%22%3A%5B%22Northern+Rockies+Ecosystem+Protection+Act%22%5D%7D&s=1&r=2

and S. 828:

https://www.congress.gov/bill/116th-congress/senate-bill/827?q=%7B%22search%22%3A%5B%22Northern+Rockies+Ecosystem+Protection+Act%22%5D%7D&s=1&r=1

Please see the attached "***The Roadless Report***."

Please see the attached report titled: "Have western USA fire suppression and megafire active management approaches become a contemporary Sisyphus?" By Dominick A. DellaSala[a,*], Bryant C. Baker[b,c], Chad T. Hanson[d], Luke Ruediger[e,f], William Baker [g]

The abstract of the paper states:

Fire suppression policies and "active management" in response to wildfires are being carried out by land man- agers globally, including millions of hectares of mixed conifer and dry ponderosa pine (Pinus ponderosa) forests of the western USA that periodically burn in mixed severity fires. Federal managers pour billions of dollars into command-and-control fire suppression and the MegaFire (landscape scale) Active Management Approach (MFAMA) in an attempt to contain wildfires increasingly influenced by top down climate forcings. Wildfire suppression activities aimed at stopping or slowing fires include expansive dozerlines, chemical retardants and igniters, backburns, and cutting trees (live and dead), including within roadless and wilderness areas. MFAMA involves log-

ging of large, fire-resistant live trees and snags; mastication of beneficial shrubs; degradation of wildlife habitat, including endangered species habitat; aquatic impacts from an expansive road system; and logging-related carbon emissions. Such impacts are routinely dismissed with minimal environmental review and defiance of the precautionary principle in environmental planning. Placing restrictive bounds on these activities, deemed increasingly ineffective in a change climate, is urgently needed to overcome their contributions to the global biodiversity and climate crises. We urge land managers and decision makers to address the root cause of recent fire increases by reducing greenhouse gas emissions across all sectors, reforming industrial forestry and fire suppression practices, protecting carbon stores in large trees and recently burned forests, working with wildfire for ecosystem benefits using minimum suppression tactics when fire is not threatening towns, and surgical application of thinning and prescribed fire nearest homes.

The Bitterroot Front website states: ***This project aims to increase forest resiliency by addressing insect and disease risks, reducing risk of high severity wildfire, maintaining/improving wildlife habitat and watershed conditions, as well as maintaining/improving recreation and roads.***

This conclusion of this paper is that the purpose and need of the project will not be met by your proposed management activities. This paper is now the best available science. Why does the Bitterroot Front proposal not follow the best available science?

Thank you for your attention to these concerns.

Sincerely yours,

Mike Garrity

Alliance for the Wild Rockies

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- 406-459-5936

And on behalf of:

Sara Johnson Native Ecosystems Council P.O. Box 125

Willow Creek, MT 59760

and for

Steve Kelly, Executive Director Montana Ecosystems Defense

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