May 5, 2024

Objection against the Sage Hen Integrated Restoration Project

To: Objection Reviewing Officer

USDA Forest Service

Intermountain Region

324 25th Street

Ogden, Utah 84401

1. Objector's Name and Address:

Lead Objector

Mike Garrity,

Director, Alliance for the Wild Rockies (AWR),

PO Box 505,

Helena, MT 59624;

phone 406-459-5936

And for

Sara Johnson, Director, Native Ecosystems Council (NEC),

PO Box 125, Willow Creek, MT 59760;

Jason L. Christensen – Director Yellowstone to Uintas Connection (Y2U)

jason@yellowstoneuintas.org

435-881-6917

Katie Fite, Wildlands Defense, PO Box 125, Boise, ID 83701

208-871-5738

Signed this 5th day of May, 2024 for Objectors

/s/

Michael Garrity

2. Name of the Proposed Project

Sage Hen Integrated Restoration Project

3. Location of Project, Name and Title of Responsible Official

Project Location: Emmett Ranger District, Boise National Forest, Gem and Valley Counties, Idaho. The proposed action will authorize logging and burning up to 76,939 acres in the Sage Hen Reservoir area in the Upper Squaw Creek for a period of up to twenty years. The project is

located in Sage Hen Management Area 16, west of Highway 55 approximately 50 miles north of Boise, Idaho.

Name and Title of Responsible Official

Boise National Forest Supervisor Brant Peterson is the Responsible Official for this project.

Boise National Forest
1249 S. Vinnell Way, Suite 200
Boise, ID 83709

4. Connection between previous comments and those raised in the Objection:

NEC, Y2U, Wildlands Defense and AWR provided comments on the proposed project on February 20, 2024.

1)We wrote in our comment.

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 or even for an EA if you refuse to write an EIS:

A. Disclose all Boise 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 foreseeable logging, grazing, and road building activities within the Project area;

D. Solicit and disclose comments from the Idaho Department of Fish and Game regarding the impact of the Project on wildlife habitat;

E. Solicit and disclose comments from the Idaho 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 such as bull trout with potential and/or actual critical 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 Boise National Forest's record of compliance with state best management practices regarding stream sedimentation from ground-disturbing management activities;

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

L. Disclose the Boise National Forest's record of compliance with the additional monitoring requirements set forth in previous DN/FONSIs and RODs on the Boise 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. Have you done NEPA on the Community Fire Plan that the project relies on?

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).

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 required by the Forest Plan.

W. Please disclose how often the Project area has been sur- veyed for bull trout, chinook salmon, wolverines, pine martins, northern goshawks, and lynx.

X. Is it impossible for a bull trout, chinook salmon, wolverines, pine martins, northern goshawks, monarch butterflies, and whitebark pine to inhabit the Project area?

Y. Would the habitat be better for bull trout, chinook salmon, wolverines, pine martins, northern goshawks, monarch butterflies, and whitebark pine 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 martins, monarch

butterflies, whitebark pine, northern goshawks, bull trout, and chinook salmon? Have you conducted ESA consultation?

AA. Please provide us with the full BA for the bull trout, bull trout critical habitat, chinook salmon, chinook salmon critical habtiat, wolverines, pine martins, northern goshawks, whitebark pine, and monarch butterflies.

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 replacement 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 implementation;

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 regar- ding 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 reduce 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 Boise 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 Boise 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 effective- ness of 70% in summer range and at least 50% in all other areas where elk are one of the prima- ry resource considerations. Ac- cording to Figure 1 in Chri- stensen et al (1993), this equates to a maximum road den- sity of approximately 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- eration." 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.".

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 fo- rests, fire behavior in Yellow- stone during 1988, although se- vere, was nei- ther unusual nor surprising."

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

of wildfires under extreme weather conditions."

Schoennagel et al (2004) states: "The Yellowstone 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 restore subalpine forests, because they were dense historically and have not changed significantly in re- sponse to fire suppression. Thus, fuel- reduction efforts in most Rocky Mountain sub- alpine forests probably would not effectively mitigate the fire hazard, and these efforts may create new ecological problems by moving

the forest structure outside the historic range of variability."

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 suppression 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 example, 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 microclimate 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 fuels 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 Dominick A. DellaSala et. al. found that reviewed 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 average, 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.

Please find Dellasala 2022 attached. Please also find Baker 2023 attached which calls into question that the project will make the forest more resilient.

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 Idaho 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 Idaho Species of Concern (birds, mammals including bats) are not clear- ly de- fined, and demonstrated to be effective as per the current best science.

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?

The EA provides no analysis as to the veracity of the project's Purpose and Need, the project's objectives, goals, or desired conditions.

The Forest Service responded:

The project is within the Shared Stewardship Southern Idaho Priority Landscape, which was designated in an agreement between the state and federal governments. A related concept is the Good Neighbor Authority that allows the Forest Service to enter into agreements with state forestry agencies to accomplish critical Decision Notice for the Sage Hen Integrated Restoration Project work to help achieve the agencies' goals. The Forest Service will continue outreach efforts to adjacent landowners and our partner land management agencies throughout the implementation of the Sage Hen Integrated Restoration Project to improve coordination and better leverage limited resources to address our mutual restoration objectives.

These pages provide analysis/documentation the commenter requests from the agency, but does not tie these requests to the project purpose and need nor to any specific proposed actions related to this project. The Forest Service considered all relevant, appropriate, and available information in the EA. NEPA documents are to be analytic, rather than encyclopedic.

Remedy: The Forest Service needs to demonstrate that they are complying with the definition of the Wildland Urban Interface in the Healthy Forest Restoration Act (HFRA).

The HFRA defines wildland urban interface as follows: "The term 'wildland-urban interface' means– (A) an area within or adjacent to an at-risk community that is identified in recommendations to the Secretary in a community wildfire protection plan . . . ." 16 U.S.C. § 6511 (16) (emphasis added). The HFRA defines "at-risk community" as follows:

The term "at-risk community" means an area-- (A) that is comprised of--

(i) an interface community as defined in the notice. . . (66 Fed. Reg. 753, January 4, 2001); or

(ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land;

(B) in which conditions are conducive to a large-scale wildland fire disturbance event; and

(C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event.

16 U.S.C. § 6511 (1) (emphases added). In turn, the cited Federal Register notice mandates: "The development density for an interface community is usually 3 or more structures per acre, with shared municipal services. . . . An alternative definition of the interface community emphasizes a population density of 250 or more people per square mile." 66 Fed. Reg at 753, 2001 WL 7426.

Please explain how the Madison County community wildfire protection plan (CWPP) defines the Wildland Urban Interface and if it complies with the Healthy Forest Restoration Act.

NEPA "requires a federal agency such as the Forest Service to prepare a detailed EIS for all 'major Federal actions significantly affecting the quality of the human environment.'" Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1211–12 (9th Cir. 1998) (citing 42 U.S.C. § 4332(2)(C)). "Major reinforces but does not have a meaning independent of significantly []." 40 C.F.R. § 1508.18. "As a preliminary step, an agency may prepare an EA to decide whether the environmental impact of a proposed action is significant enough to warrant preparation of an EIS." Id.; 40 C.F.R. § 1501.2. Before reaching the question of significance, however, there must be an analysis of whether there is "federal action." See Envtl. Prot. Info. Ctr. v. USFS, 2003 WL 22283969 *9, n.10 (N.D. Cal. 2003).

The CEQ regulations state:

(b) Federal actions tend to fall within one of the following categories: .. .

(2) Adoption of formal plans, such as official documents prepared or approved by federal agencies which guide or prescribe alternative uses of Federal resources, upon which future agency actions will be based.

.. . 40 C.F.R. § 1508.18.

Furthermore, in general, CEQ regulations allow agencies to "tier" from a site-specific NEPA analysis to a programmatic analysis "to eliminate repetitive discussions of the same issues" by "incorporat[ing] discussions from the broader statement by reference. . . . ." 40 C.F.R. § 1502.20. "However, tiering to a document that has not itself been subject to NEPA review is not permitted, for it circumvents the purpose of NEPA." Kern v. BLM, 284 F.3d 1062, 1073 (9th Cir. 2002)). The CEQ regulations are binding on the Forest Service. See Trustees for Alaska v. Hodel, 806 F.2d 1378, 1382 (9th Cir. 1986). The Forest Service does not receive deference when implementing the CEQ regulations because those regulations were not issued by the Forest Service. See U.S. Dep't of Treasury, I.R.S. v. Fed. Labor Relations Auth., 996 F.2d 1246, 1250 (D.C. Cir. 1993)("We generally do not grant any deference to the [an agency's] interpretation of regulations promulgated by other agencies.")

In violation of NEPA, the Forest Service has not yet conducted a NEPA analysis for the Wildfire Plan. Other courts have found that other types of fire management

plans adopted and implemented by the Forest Service are major federal actions under NEPA. For example, in People of Cal. ex rel. Lockyer v. USFS, the district court found "that the Fire Plan is a major federal action, and so defendant's decision not to conduct any environmental review was unreasonable." 2005 WL 1630020 *11 (N.D. Cal. 2005). Likewise, in Environmental Protection Information Center (EPIC) v. USFS, the district court held: "Defendant violated NEPA by failing to prepare an Environmental Assessment or an Environmental Impact Statement in connection with the issuance of the

Six Rivers National Forest Fire Management Plan." 2003 WL 22283969, at *13 (N.D. Cal. 2003). In EPIC, the district court addressed a relevant Ninth Circuit case, Port of Astoria v. Hodel, in which the Ninth Circuit addressed whether a "regional proposal for development and distribution of power" was a federal action under NEPA. 595 F.2d 467, 477–78 (9th Cir. 1979). The proposal was called "Phase 2" and resulted "from an agreement between [the agency], its direct-service industrial customers, and the public, cooperative, and investor-owned utilities in [the] region." Id. The agency argued that Phase 2 was not a federal program, but the Ninth Circuit rejected that argument: "although Phase 2 is a cooperative enterprise involving [the agency] and nonfederal participants, it is [the agency's] participation that integrates the entire program. . . . Without [the agency] it is doubtful that Phase 2 would ever have been developed or, if developed, would have become feasible." Id.

In this case, there is no mention of developing a Wildfire Plan with public participation.

Alternatively or additionally, even if the Wildfire Plan did not require NEPA analysis at the time it was created, once the wildland urban interface designation from the Plan was used to justify and authorize this site-specific project, NEPA analysis was required under the doctrine of "tiering." The seminal Ninth Circuit case on this issue is Kern v. BLM, 284 F.3d 1062 (9th Cir. 2002). In Kern, the Ninth Circuit addressed the BLM's adoption of guidelines for management of a fungus affecting Port Orford cedar trees. In an earlier case, the Ninth Circuit had denied a claim that the guidelines themselves were a major federal action that required NEPA analysis.

The FS must have a detailed long-term program for maintaining the allegedly safer conditions, including how areas will be treated in the future following proposed treatments, or how areas not needing treatment now will be treated as the need arises. The public at large and private landowners must know what the scale of the long-term efforts must be, including the amount of funding necessary, and the likelihood based on realistic funding scenarios for such a program to be adequately and timely funded.

The FS must assess the fuel and fire risk situation across land ownership boundaries to understand, and disclose to

the public, the likely fire scenarios across the area's landscape. Only then can the context of your proposal be adequately weighed on its merits and evaluated on its merits.

The FS (Cohen, 1999) reviewed current scientific evidence and policy directives on the issue of fire in the wildland/ urban interface and recommended an alternative focus on structure ignitability rather than extensive wildland fuel management:

> The congruence of research findings from different analytical methods suggests that home ignitability is the principal cause of home losses during wildland fires… Home ignitability also dictates that effective mitigating actions focus on the home and its immediate surroundings rather than on extensive wildland fuel management.

> [Research shows] that effective fuel modification for reducing potential WUI fire losses need only occur within a few tens of meters from a home, not hundreds of meters or more from a home. This research indicates that home losses can be effectively

reduced by focusing mitigation efforts on the structure and its immediate surroundings. Those characteristics of a structure's materials and design and the surrounding flammables that determine the potential for a home to ignite during wildland fires (or any fires outside the home) will, hereafter, be referred to as home ignitability.

> The evidence suggests that wildland fuel reduction for reducing home losses may be inefficient and ineffective. Inefficient because wildland fuel reduction for several hundred meters or more around homes is greater than necessary for reducing ignitions from flames. Ineffective because it does not sufficiently reduce firebrand ignitions (Cohen, 1999)

That research also recognizes “the imperative to separate the problem of the wildland fire threat to homes from the problem of ecosystem sustainability due to changes in wildland fuels” (Ibid).

Please see the following article titled:

Montana researchers urge towns to focus on wildfire preparation

February 7, 2024

https://missoulacurrent.com/research-wildfire-preparation/

Laura Lundquist

(Missoula Current) For more than a decade, a small group of scientists have been trying to convince people that fireproofing their homes is far more effective than logging the forest when it comes to surviving wildfire. But few people are listening.

In mid-December, six researchers published a paper in the Proceedings of the National Academy of Sciences journal warning that communities across the nation, but particularly those in the West, aren't prepared to survive an urban conflagration such as the one that devastated Lahaina, Hawaii, in August.

The paper, titled "Wildland-urban fire disasters aren't actually a wildfire problem," points out that, since 2016, communities from Lahaina to Gatlinburg, Tenn., that have lost hundred of homes to fires have certain things in common: the fires occurred under extreme weather conditions - high winds and persistent drought - and most of the structures weren't fire-resistant.

"These problem fires were defined as an issue of wildfires that involved houses. In reality, they are urban fires initiated by wildfires. That's an important distinction - and one that has big repercussions for how we prepare ourselves for future fires," the authors wrote.

The authors included three researchers from the Forest Science and Fire Sciences laboratories of the U.S. Forest Service Rocky Mountain Research Station in Missoula and one from Headwaters Economics in Bozeman.

In a 2014 paper in the Proceedings of the National Academy of Science, some of the same authors developed a community risk assessment that put the focus on improving the security of individual homes in a community, not the forest around them.

The emphasis is placed on modifying the house and the home ignition zone, a region within 100 feet of a house where debris and vegetation should be eliminated or minimized to reduce the chance of fire getting close to the house.

The reason that urban conflagrations begin and spread is because wind pushes embers and heat from one unprotected building to another, overwhelming fire departments that normally train to fight fire in just one building. Conditions are made worse when buildings are close together, because radiant heat becomes a bigger factor, spreading fire quicker.

"Reducing the likelihood that a home will ignite interrupts the disaster sequence by enabling effective structure protection. New construction siting, design, construction materials, and landscaping requirements should take wildfire potential into account," the authors wrote in the December paper.

One of the paper's authors, Jack Cohen, is a fire-behavior analyst and heat transfer engineer who has spent 40 years investigating wildfires, particularly those that are linked to incidents where hundreds of homes burned. He has spent at least the past decade writing papers and giving talks about the need to focus on making homes less susceptible to wildfires, which are a natural process, especially in the arid West.

When asked why the researchers decided to submit the recent article that seeks to drum home points they already promoted a decade ago, Cohen said cities and agencies have done very little during that time period to put their recommendations into place.

"What prompted us this time was the Lahaina urban conflagration that was associated with a grassfire. It may be a repeated message on our part, but it's not being received very well. Not much has changed," Cohen said. "The federal and state agencies still don't get it - they're still defining the problem as a wildfire control problem."

Since the 2014 paper, Cohen and other researchers have had to just watch as town after town has burned terribly

but predictably, as if no one has read their research. In Gatlinburg and Pigeon Forge, Tenn., 2,460 buildings burned in a 2016 fire; in 2018, the Camp Fire led to the loss of almost 19,000 buildings in Paradise, Calif.; in December 2021, 1,084 buildings burned in Superior and Louisville, Colo. from a grass fire; and in November 2021, a grassfire sparked fires in 23 homes in Denton, Mont.

Each wildfire had very little connection to most of the burning buildings, Cohen said. A wildfire is the source of initial ignition, but from that point on, it's a series of structure fires that lead to more structure fires. For example, with the Four Mile Canyon Fire in Boulder, Colo., the state of Colorado and the Forest Service had completed a number of fuel treatments nearby that they touted as protective. But high winds carried fire brands to ignite the houses far from the fire. Cohen found that while 168 houses burned, a lot of vegetation around the houses didn't, "so the wildfire didn't sweep through town."

"In the past five years, a number of incidents with more than 100 houses burning have been initiated by grass fires, which burn quickly. The grass fires pass through and are gone while the community continued to burn," Cohen said. "What I've found, particularly over the past five or six years, is that extreme wildfire is not dependent on closed-canopy conifers that produce big flames. The only time these urban disasters occur is under extreme conditions. That typically means it's very windy."

Nothing about the Lahaina Fire surprised Cohen. Not even the overblown claims that a wildfire "roared through and destroyed the town." Again, the wildfire was over before the town really started to burn. The fire started as a grassfire fanned by high winds, and had Lahaina not been there, the fire would have burned through the buffel grass and guinea grass within a matter of minutes before it died out on the beach.

But Lahaina was there, a high-density community with several blocks of multi-story, largely-connected wooden structures. That configuration caused buildings to catch fire either due to burning embers flying from other buildings or from catching fire due to the overwhelming heat from nearby buildings.

"The ignition initiated where the grassfire came down, and that was it - it was a conflagration," Cohen said. "You don't want to be in a high-density community when you can't control the fire. Thirteen of the 26 fatalities in the 1991 Oakland Hills Fire occurred in the street when two-story buildings were burning on both sides of the street and the road became blocked. The heat was untenable."

One house in Lahaina stood untouched and was dubbed "the miracle house." But Cohen said it was just a good example of the points he and his fellow authors have been trying to communicate about defensible space and being fire-adapted. The owners had recently renovated the house with a nonflammable roof. It had wood walls, but

the nearest building was about 30 feet away - far enough to prevent radiant heat from starting a fire - and there was little debris on the grounds or the house to actively spread the fire.

"The home ignition zone works," Cohen said. "The home ignition zone came out of the modeling I did and then the crown fire experiments I did with wood walls to show the distance, the proximity required to produce an ignition was realistic. At the same time, California was cutting 300-foot clearances around communities, which means nothing to (airborne) burning embers, but it's way over (what's required) for radiant heat exposure."

Cohen and his colleagues hope their latest paper prompts more action from local governments. Cohen is hoping Missoula County can do a better job when it updates its Wildfire Protection Plan in the near future.

But more than likely, Cohen said, they'll be writing a similar paper in another few years, trying to make politicians and the public understand. It doesn't help that they're fighting some in their own agency, the Forest Service, who insist that logging, not home modification, will save communities.

"Fire is inevitable. But nobody's figuring it out," Cohen said. "We're starting from the presumption that it's wildfire that spreads through a community that lays it to waste. We even have the agencies responding in that fashion by being obsessed with this notion of wildfire

control. So they do fuel treatments to have safe firefighting. That's not only counter ecologically, it doesn't work."

Contact reporter Laura Lundquist at lundquist@missoulacurrent.com.

Please find the paper, ***Wildland-urban fire disasters aren't actually a wildfire problem***, by Calkin et al. 2023 attached.

Calkin et al. 2023 is the best available since and shows the project is not meeting the purpose and need of the project and is in violation of the Healthy Forest Act, NEPA, NFMA, and the APA.

Please consider that thinning can result in faster fire spread than in the unthinned stand. Graham, et al., 1999a point out that fire modeling indicates:

> For example, the 20-foot wind speed must exceed 50 miles per hour for midflame wind speeds to reach 5 miles per hour within a dense Stand (0.1 adjustment factor). In contrast, in an open stand (0.3 adjustment factor), the same midflame wind speeds would occur at only a 16-mile-per-hour wind at 20 feet.

Graham, et al., 1999a also state:

> Depending on the type, intensity, and extent of thinning, or other treatment applied, fire behavior can be improved (less severe and intense) or exacerbated." … Fire intensity in thinned stands is greatly reduced if thinning is accompanied by reducing the surface fuels created by the cuttings. Fire has been successfully used to treat fuels and decrease the effects of wildfires especially in climax ponderosa pine forests (Deeming 1990; Wagel and Eakle 1979; Weaver 1955, 1957). In contrast, extensive amounts of untreated logging slash contributed to the devastating fires during the late 1800s and early 1900s in the inland and Pacific Northwest forests.

In their conclusion, Graham, et al., 1999a state:

> Depending on intensity, thinning from below and possibly free thinning can most effectively alter fire behavior by reducing crown bulk density, increasing crown base height, and changing species composition to lighter crowned and fire-adapted species. Such intermediate treatments can reduce the severity and intensity of wildfires for a given set of physical and weather variables. But crown and selection thinning would not reduce crown fire potential.

Since the scientific literature suggests that your thinning activities will actually increase the rate of fire spread, you

need to reconcile such findings with the contradictory assumptions expressed in your scoping letter.

Please see the column below by Dr. Chad Hanson.

https://thehill.com/blogs/congress-blog/energy-environment/590415-logging-makes-forests-and-homes-more-vulnerable-to

Logging makes forests and homes more vulnerable to wildfires

The West has seen some really big forest fires recently, particularly in California's Sierra Nevada and the Cascade Mountains of Oregon. Naturally, everyone is concerned and elected officials are eager to be seen as advancing solutions. The U.S. Senate is negotiating over the Build Back Better bill, which currently contains nearly $20 billion in logging subsidies for "hazardous fuel reduction" in forests. This term contains no clear definition but is typically employed as a euphemism for "thinning", which usually includes commercial logging of mature and old-growth trees on public lands. It often includes clearcut logging that harms forests and streams and intensifies wildfires.

Logging interests stand poised to profit, as they tell the public and Congress that our forests are overgrown from years of neglect. Chainsaws and bulldozers are their remedy. Among these interests are agencies like

the U.S. Forest Service that financially benefits from selling public timber to private logging companies.

In this fraught context, filled with a swirling admixture of panic, confusion, and opportunism, the truth and scientific evidence are all too often casualties. This, unfortunately, can lead to regressive policies that will only exacerbate the climate crisis and increase threats to communities from wildfire. We can no longer afford either outcome.

Many of the nation's top climate scientists and ecologists recently urged Congress to remove the logging subsidies from the Build Back Better bill. Scientists noted that logging now emits about as much carbon dioxide each year as does burning coal. They also noted that logging conducted under the guise of "forest thinning" does not stop large wildfires that are driven mainly by extreme fire-weather caused primarily by climate change. In fact, it can often make fires burn faster and more intensely toward vulnerable homes. Unprepared towns like Paradise and Grizzly Flats, Calif., unfortunately burned to the ground as fires raced through heavily logged surroundings.

Nature prepares older forests and large trees for wildfires. As trees age, they develop thick impenetrable bark and drop their lower limbs, making it difficult for fire to climb into the tree crowns. Older, dense forests used by the imperiled spotted owl burn in mixed intensities that is good for the owl and hundreds of

species that depend on these forests for survival. Our national parks and wilderness areas also burn in lower fire intensities compared to heavily logged areas.

Occasionally even some of the largest trees will succumb to a severe fire but their progeny are born again to rapidly colonize the largest and most severe burn patches. Dozens of cavity-nesting birds and small mammals make their homes in the fire-killed trees. Soon after fire in these forests, nature regenerates, reminiscent of the mythical phoenix, aided by scores of pollinating insects and seed carrying birds and mammals.

Wildfires are highly variable, often depending on what a gust of wind does at a given moment, and even the biggest fires are primarily comprised of lightly and moderately-burned areas where most mature trees survive. By chance, in any large fire there will always be some areas that were thinned by loggers that burned less intense compared to unthinned areas. Before the smoke fully clears, logging interests find those locations and take journalists and politicians to promote their agenda. What they fail to disclose are the many examples where managed forests burned hotter while older, unmanaged forests did the opposite.

This sort of self-serving show boating occurred after the 2020 Creek Fire in the Sierra National Forest in California, as news stories echoed the logging industry's

“overgrown forests” narrative based on a single low-intensity burn area. When all of the data across the entire fire were analyzed, it turned out that logged forests, including commercial “thinning” areas, actually burned the most intensely.

In Oregon, The Nature Conservancy has been conducting intensive commercial thinning on its Sycan Marsh Preserve. Based on satellite imagery, the northern portion of the 414,000-acre Bootleg Fire of 2021 swept through these lands. Within days, TNC began promoting its logging program, focusing on a single location around Coyote Creek, where a “thinned” unit burned lightly. They failed to mention that nearly all of the dense, unmanaged forests burned lightly too in that area. Well-intentioned environmental reporters were misled by a carefully picked example.

Billions of dollars are being wasted to further this false logging industry narrative—funds that instead should be used to prepare communities for more climate-driven wildfires. Congress can instead redirect much needed support to damaged communities so they can build back better and adopt proven fire safety measures that harden homes and clear flammable vegetation nearest structures.

The path forward is simple, with two proven remedies that work. Protect forests from logging so they can absorb more carbon dioxide from the atmosphere and

moderate fire behavior, and adapt communities to the new climate-driven wildfire era.

Chad Hanson, Ph.D., is a research ecologist with the John Muir Project and is the author of the 2021 book, "Smokescreen: Debunking Wildfire Myths to Save Our Forests and Our Climate." Dominick DellaSala, Ph.D., is chief scientist with Wild Heritage and the author of Conservation Science and Advocacy for a Planet in Peril: Speaking Truth to Power.

Please see the column below by Chad Hanson and myself.

Opinion by **Chad Hanson** and
Mike Garrity
https://www.washingtonpost.com/opinions/no-we-cant--and-shouldnt--stop-forest-fires/2017/09/26/64ff718c-9fbf-11e7-9c8d-cf053ff30921_story.html
September 26, 2017

Chad Hanson is a research ecologist with the John Muir Project and is co-editor and co-author of "The Ecological Importance of Mixed-Severity Fires: Nature's Phoenix." Mike Garrity is executive director of the Alliance for the Wild Rockies.

The American West is burning, Sen. Steve Daines (R-Mont.) tells us in his recent Post op-ed. He and officials in the Trump administration have described Western forest fires as catastrophes, promoting

congressional action ostensibly to save our National Forests from fire by allowing widespread commercial logging on public lands. This, they claim, will reduce forest density and the fuel for wildfires.

But this position is out of step with current science and is based on several myths promoted by commercial interests.

The first myth is the notion that fire destroys our forests and that we currently have an unnatural excess of fire. Nothing could be further from the truth. There is a broad consensus among scientists that we have considerably less fire of all intensities in our Western U.S. forests compared with natural, historical levels, when lightning-caused fires burned without humans trying to put them out.

There is an equally strong consensus among scientists that fire is essential to maintain ecologically healthy forests and native biodiversity. This includes large fires and patches of intense fire, which create an abundance of biologically essential standing dead trees (known as snags) and naturally stimulate regeneration of vigorous new stands of forest. These areas of “snag forest habitat” are ecological treasures, not catastrophes, and many native wildlife species, such as the rare black-backed woodpecker, depend on this habitat to survive.

Fire or drought kills trees, which attracts native beetle species that depend on dead or dying trees. Woodpeckers eat the larvae of the beetles and then create nest cavities in the dead trees, because snags are softer than live trees. The male woodpecker creates two or three nest cavities each year, and the female picks the one she likes the best, which creates homes for dozens of other forest wildlife species that need cavities to survive but cannot create their own, such as bluebirds, chickadees, chipmunks, flying squirrels and many others.

More than 260 scientists wrote to Congress in 2015 opposing legislative proposals that would weaken environmental laws and increase logging on National Forests under the guise of curbing wildfires, noting that snag forests are "quite simply some of the best wildlife habitat in forests."

The Forest Service also needs to answer the public's question. It is is a violation of NEPA to not do so,

The Forest Service should withdraw the EA, Draft Decision Notice and FONSI and write an EIS for this project that fully complies with the law or choose the No Action Alternative.

The FS must disclose its transparent, well thought-out long-term strategy for old-growth associated wildlife species

viability in a properly-defined cumulative effects analysis area.

“The purpose of the Project is to promote resiliency and ecological function by helping to restore and maintain the structure, function, composition and connectivity of Forest terrestrial systems.

Since Ecological restoration is the project’s priority, the NEPA document must at least identify all the existing ecological liabilities caused by past management actions. This includes poorly located or poorly maintained roads, high-risk fuel situations caused by earlier vegetation manipulation projects, wildlife security problems by open motorized roads and trails plus those that are closed but violated—and include all those impacts in the analyses.

Any desire to keep a road in the project area WUI must be in harmony with the alleged priority goals (again, to reduce the chances that fire will destroy private structures and harm people), not driven by timber production goals. The analysis must show how all roads will in fact be in harmony with the priority goals.

Proposed activities could artificialize the forest ecosystem. Lodgepole pine is particularly subject to blowdown, once thinned. And any forest condition that is maintained through mechanical manipulation is not maintaining ecosystem function. The proposed management activities would not be integrated well with the processes that

naturally shaped the ecosystem and resulted in a range of natural structural conditions. Thus, the need for standards guiding both the delineation of zones where artificializing fuel reduction actions may take place, and that also set snag and down woody debris retention amounts.

That brings us to myth No. 2: that eliminating or weakening environmental laws — and increasing logging — will somehow curb or halt forest fires. In 2016, in the largest analysis ever on this question, scientists found that forests with the fewest environmental protections and the most logging had the highest — not the lowest — levels of fire intensity. Logging removes relatively noncombustible tree trunks and leaves behind flammable "slash debris," consisting of kindling-like branches and treetops.

This is closely related to myth No. 3: that dead trees, usually removed during logging projects, increase fire intensity in our forests. A comprehensive study published in the Proceedings of the National Academy of Sciences thoroughly debunked this notion by showing that outbreaks of pine beetles, which can create patches of snag forest habitat, didn't lead to more intense fires in the area. A more recent study found that forests with high levels of snags actually burn less intensely. This is because flames spread primarily through pine needles and small twigs, which fall to the ground and soon decay into soil shortly after trees die.

Finally, myth No. 4: that we can stop weather-driven forest fires. We can no more suppress forest fires during extreme fire weather than we can stand on a ridgetop and fight the wind. It is hubris and folly to even try. Fires slow and stop when the weather changes. It makes far more sense to focus our resources on protecting rural homes and other structures from fire by creating “defensible space” of about 100 feet between houses and forests. This allows fire to serve its essential ecological role while keeping it away from our communities.

Lawmakers in Congress are promoting legislation based on the mythology of catastrophic wildfires that would largely eliminate environmental analysis and public participation for logging projects in our National Forests. This would include removing all or most trees in both mature forests and in ecologically vital post-wildfire habitats — all of which is cynically packaged as "fuel reduction" measures.

The logging industry’s political allies have fully embraced the deceptive “catastrophic wildfire” narrative to promote this giveaway of our National Forests to timber corporations. But this narrative is a scientifically bankrupt smoke screen for rampant commercial logging on our public lands. The American people should not fall for it.

Please see the letter from the 260 scientist to Congress which is mentioned in the column above, below.

Open Letter to U.S. Senators and President Obama from Scientists Concerned about Post-fire Logging and Clearcutting on National Forests

As professional scientists with backgrounds in ecological sciences and natural resources management, we are greatly concerned that legislation which passed the House in July 2015, H.R. 2647, would suspend federal environmental protections to expedite logging of both post- fire wildlife habitat and unburned old forests on national forest lands. This legislation would also effectively eliminate most analysis of adverse environmental impacts, and prevent enforcement of environmental laws by the courts.

A similar measure, S. 1691, currently proposed in the U.S. Senate, would override federal environmental laws to dramatically increase post-fire logging, increase logging and clearcutting of mature forests, eliminate analysis of environmental impacts for most logging projects, and effectively preclude enforcement of environmental laws. The bills propose these measures under the guise of “ecosystem restoration,” ostensibly to protect national forests from fire.

Not only do these legislative proposals misrepresent scientific evidence on the importance of post-fire wildlife habitat and mature forests to the nation, they also ignore the current state of scientific knowledge about how such practices would degrade the ecological integrity of forest ecosystems on federal lands. We urge you to vote against this legislation, and urge President Obama to veto these bills if they are passed in some form by Congress.

National Forests were established for the public good and include most of the nation's remaining examples of intact forests. Our national forests are a wellspring of clean water for millions of Americans, a legacy for wildlife, sequester vast quantities of carbon important in climate change mitigation, and provide recreation and economic opportunities to rural communities if responsibly managed. Though it may seem at first glance that a post-fire landscape is a catastrophe, numerous scientific studies tell us that even in the patches where forest fires burn most intensely, the resulting wildlife habitats are among the most ecologically diverse on western forestlands and are essential to support the full richness of forest biodiversity.1

Post-fire conditions also serve as a refuge for rare and imperiled wildlife species that depend upon the unique habitat features created by intense fire. These include an abundance of standing dead trees, or "snags," which provide nesting and foraging

habitat for woodpeckers and many other plant and wildlife species responsible for the rejuvenation of a forest after fire.

The post-fire environment is rich in patches of native flowering shrubs that replenish soil nitrogen and attract a diverse bounty of beneficial insects that aid in pollination after fire. Small mammals find excellent habitat in the shrubs and downed logs, providing food for foraging spotted owls. Deer and elk browse on post-fire shrubs and natural conifer regeneration. Bears eat and disperse berries and conifer seeds often found in substantial quantities after intense fire, and morel mushrooms, prized by many Americans, spring from ashes in the most severely burned forest patches.

1 See http://store.elsevier.com/The-Ecological-Importance-of-Mixed-Severity-Fires/Dominick-DellaSala/isbn- 9780128027493/.

This post-fire renewal, known as “complex early seral forest,” or “snag forest,” is quite simply some of the best wildlife habitat in forests, and is an essential stage of natural processes that eventually become old-growth forests over time. This unique habitat is not mimicked by clearcutting, as the legislation incorrectly suggests. Moreover, it is the least protected of all forest habitat types, and is often as

rare, or rarer, than old-growth forest, due to extensive fire suppression and damaging forest management practices such as those encouraged by this legislation. Much of the current scientific information on the ecological importance of post-fire habitat can be found in several excellent videos, including ways for the public to co-exist with fires burning safely in the backcountry.1,2

After a fire, the new forest is particularly vulnerable to logging disturbances that can set back the forest renewal process for decades. Post-fire logging has been shown to eliminate habitat for many bird species that depend on snags, compact soils, remove biological legacies (snags and downed logs) that are essential in supporting new forest growth, and spread invasive species that outcompete native vegetation and, in some cases, increase the flammability of the new forest.

While it is often claimed that such logging is needed to restore conifer growth and lower fuel hazards after a fire, many studies have shown that logging tractors often kill most conifer seedlings and other important re-establishing vegetation and actually increases flammable logging slash left on site. Increased chronic sedimentation to streams due to the extensive road network and runoff from logging on steep slopes degrades aquatic organisms and water quality.

We urge you to consider what the science is telling us: that post-fire habitats created by fire, including patches of severe fire, are ecological treasures rather than ecological catastrophes, and that post-fire logging does far more harm than good to public forests. We urge Senators to vote against any legislation that weakens or overrides environmental laws to increase post-fire logging or clearcutting of mature forest as degrading to the nation's forest legacy. And, we urge President Obama to veto any such legislation that reaches his desk as inconsistent with science- based forest and climate change planning.

Sincerely (affiliations are listed for identification purposes only),

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2http://www.fs.usda.gov/detail/r5/news-events/audiovisual/?cid=stelprdb5431394;

https://vimeo.com/75533376; http://vimeo.com/groups/future/videos/8627070; http://

www.youtube.com/watch?v=iTl-naywNyY&list=PL7F70F134E853F520&index=15; http://www.youtube.com/watch?v=1BmTq8vGAVo&feature=youtu.be; http://vimeo.com/3428311

3Hutto, R. L. 2006. Toward meaningful snag-management guidelines for postfire salvage logging in North American conifer forests. Conservation Biology 20:984-993. Beschta, R.L. et al. 2004. Postfire management on forested public lands of the western USA. Conservation Biology 18:957-967. Lindenmayer, D.B. et al. 2004. Salvage-harvesting policies after natural disturbance. Science 303:1303. Karr, J. et al. 2004. The effects of postfire salvage logging on aquatic ecosystems in the American West. Bioscience 54:1029-1033. DellaSala, D.A., et al. 2006. Post-fire logging debate ignores many issues. Science 314-51-52. Donato, D.C. et al. 2006. Post-wildfire logging hinders regeneration and increases fire risk. Science 311 No. 5759:352.

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Veblen (2003) questions the premises the FS often puts forth to justify "uncharacteristic vegetation patterns" discussions, that being to take management activities to alter vegetation patterns in response to fire suppression:

> The premise behind many projects aimed at wildfire hazard reduction and ecological restoration in forests of the western United States is the idea that unnatural fuel buildup has resulted from suppression of formerly frequent fires. This premise and its implications need to be critically evaluated by conducting area-specific research in the forest ecosystems targeted for fuels or ecological restoration projects. Fire regime researchers need to acknowledge the limitations of fire history methodology and avoid over-reliance on summary fire statistics such as mean fire interval and rotation period. While fire regime research is vitally important for informing decisions in the areas of

wildfire hazard mitigation and ecological restoration, there is much need for improving the way researchers communicate their results to managers and the way managers use this information.

Since disruption of fire cycles is identified, the Boise National Forest needs to take a hard look at its fire policies. The development of approved fire management plans in compliance with the Federal Wildland Fire Policy was the number one policy objective intended for immediate implementation in the Implementation Action Plan Report for the Federal Wildland Fire Management Policy and Program Review. In general, the FS lags far behind other federal land management agencies that have already invested considerable amounts of time, money, and resources to implement the Fire Policy. Continued mismanagement of national forest lands and FS refusal to fully implement the Fire Policy puts wildland firefighters at risk if and when they are dispatched to wildfires. This is a programmatic issue, one that the current Forest Plan does not adequately consider. Please see Ament (1997) as comments on this proposal, in terms of fire policy and Forest Planning.

Many adverse consequences to soil, ecological processes, wildlife, and other elements of the natural environment are

associated with thinning. (Ercelawn, 1999; Ercelawn, 2000.) For example: “Salvage or thinning operations that remove dead or decayed trees or coarse woody debris on the ground will reduce the availability of forest structures used by fishers and lynx.” (Bull et al., 2001.)

We wrote in our comments:

The scoping notice indicates that the Forest Service will use “condition-based management” scheme, an approach that does not meet the minimum requirements of NEPA as enacted by the United States Congress and has been soundly rejected by the courts. Condition-based management means the Forest Service authorized the Project before identifying specific locations for logging, road construction, prescribed burns, and other fuel reduction activities.

The “condition-based management” approach will not adequately address the direct, indirect, and cumulative effects of the Project on the human environment. Please the provide the public a clear basis for choice among alternatives. Please give the public sufficient information to foster informed decision-making or informed public participation. Failing to do so will violate NEPA, 42 U.S.C. § 4332(2)(C), and is therefore “not in accordance with law” under 5 U.S.C. § 706(2)(A) and “without observance of procedure required by law” under 5 U.S.C. § 706(2)(D).

Please see the following article by the American bar Association about the use of Condition-Based Management.

May 10, 2021

The U.S. Forest Service's Expanding Use of Condition-Based Management: Functional and Legal Problems from Short-Circuiting the Project-Planning and Environmental Impact Statement Process

Andrew Cliburn, Paul Quackenbush, Madison Prokott, Jim Murphy, and Mason Overstreet

https://www.americanbar.org/groups/environment_energy_resources/publications/fr/20210510-the-us-forest-services-expanding-use-of-condition-based-management/

Condition-based management (CBM) is a management approach that the U.S. Forest Service has increasingly used to authorize timber harvests purportedly to increase flexibility, discretion, and efficiency in project planning, analysis, and implementation. The agency believes it needs this flexible approach because sometimes conditions on the ground can change more quickly than decisions can be implemented. In practice, however, CBM operates to circumvent the National Environmental Policy Act (NEPA) review framework by postponing site-specific analysis until the Forest Service implements the project, which effectively excludes the public from site-

specific decisions, reduces transparency, and removes incentives for the agency to avoid harming localized resources. The practice should be curtailed by the Biden administration

NEPA requires federal agencies including the Forest Service to provide the public with "notice and an opportunity to be heard" in the analysis of "specific area[s] in which logging will take place and the harvesting methods to be used." Ohio Forestry Ass'n v. Sierra Club, 523 U.S. 726, 729–30 (1998). Site-specific public involvement can significantly improve projects because the agency may be unaware of harmful impacts or resource concerns until the public flags them during the environmental analysis process. Nationally, the Forest Service drops about one out of every five acres it proposes for timber harvest based on information or concerns presented during the NEPA process, often due to public comments regarding site-specific information. Public Lands Advocacy Coalition, Comments on Proposed Rule, National Environmental Policy Act (NEPA) Compliance (June 13, 2019) (analyzing 68 projects that relied on environmental assessments).

The Forest Service appears to be abandoning the site-specific analysis model in favor of CBM. CBM projects use an overarching set of "goal variables"—predetermined management criteria that guide implementation—that Forest Service staff apply to on-the-ground natural resource "conditions" encountered

during the course of project implementation, a period that can span years or even decades: essentially, when the Forest Service finds X resource condition on the ground, it applies Y timber harvest prescription. However, basic information regarding the project's details—such as unit location, timing, roadbuilding, harvesting methods, and site-specific environmental effects—is not provided at the time the Forest Service conducts its NEPA environmental review (when the public can weigh in), nor when it gives its final approval to a project (when the public can seek administrative review). Instead, site-level disclosures are made after NEPA environmental and administrative review is complete, depriving the public of opportunities to comment and influence the decision based on localized conditions.

While CBM is not a new management tool, the Forest Service has employed it for over a decade and it was used sparingly during the Obama administration. However, its use accelerated during the Trump administration and shows no sign of slowing. To date, dozens of Forest Service projects across the country have used CBM. See, e.g., Red Pine Thinning Project, Ottawa National Forest; Medicine Bow Landscape Vegetation Analysis, Medicine Bow-Routt National Forest; Sage Hen Integrated Restoration Project, Boise National Forest.

As the Forest Service's use of CBM continues, questions remain about its legality. Public-lands advocates argue that CBM violates NEPA's mandate that agencies take a hard look at the consequences of their actions before a

project commences. This "look before you leap" approach was the primary purpose of NEPA and remains the statute's greatest strength. NEPA works by requiring an agency to consider alternatives and publicly vet its analysis whenever its proposal may have "significant" environmental consequences, 42 U.S.C. § 4332(2)(C), or implicates "unresolved conflicts" about how the agency should best accomplish its objective. Id. at § 4332(2)(E). However, CBM allows the Forest Service to circumvent the effects analysis process when exercising discretion about where and how to log decisions that often may have "significant" environmental consequences.

Only two federal cases have addressed CBM's legality. In WildEarth Guardians v. Connor, 920 F.3d 1245 (10th Cir. 2019), the Tenth Circuit approved a CBM approach for a logging project in southern Colorado in Canada lynx habitat. The environmental assessment utilized CBM and analyzed three different alternatives, one of which was a worst-case scenario. For the worst-case scenario, the Forest Service assumed that the entire lynx habitat in the project area would be clear-cut. The Forest Service "took the conservative approach" because it "did not know precisely" where it would log in the lynx habitat areas. WildEarth Guardians, 920 F.3d at 1255. Based on this conservative approach, coupled with a comprehensive, region-wide lynx management agreement and its associated environmental impact statement, the court agreed with the Forest Service that its future site-specific choices were "not material" to the effects on lynx—i.e.,

that no matter where logging occurred, "there would not be a negative effect on the lynx." Id. at 1258–59.

However, a second case addressing CBM found that site-specific analysis was needed to satisfy NEPA's "hard-look" standard. In Southeast Alaska Conservation Council v. U.S. Forest Service, 443 F. Supp. 3d 995 (D. Ak. 2020), the court held that the Forest Service's Prince of Wales Landscape Level Analysis Project—a 15-year logging project on Prince of Wales Island in the Tongass National Forest—violated NEPA. The project would have authorized the logging of more than 40,000 acres, including nearly 24,000 acres of old growth, along with 643 miles of new and temporary road construction, but it "d[id] not include a determination—or even an estimate —of when and where the harvest activities or road construction . . . w[ould] actually occur." Id. at 1009. The court found that this analysis was not "specific enough" without information about harvest locations, methods, and localized impacts. Id. at 1009–10. The court further held that a worst-case analysis could not save the project, because site-specific differences were consequential. Id. at 1013.

The Forest Service's widespread use of CBM also creates compliance challenges under the Endangered Species Act (ESA). Section 7(a)(2) of the ESA requires federal agencies to consult with the Fish and Wildlife Service and/or National Marine Fisheries Service whenever a proposed action "may affect" listed species or destroy or adversely modify its critical habitat to ensure that the

action is "not likely to jeopardize" these species. 16 U.S.C. § 1536. CBM conflicts with that statutory requirement because it does not allow agencies to properly determine whether an action "may affect" or is "likely to jeopardize" a listed species when the consulting agencies do not know the specifics of when or where the action will be implemented, or what the site-specific impacts of the action may be.

For some projects, the Forest Service has tried to avoid this tension by conducting section 7 consultation prior to each phase of a CBM project, but this approach has run headlong into the general rule against segmenting project consultation duties under the ESA. See, e.g., Conner v. Burford, 848 F.2d 1441, 1457 (9th Cir. 1988). With few exceptions, section 7 consultation must cover the overall effects of the entire project at the initial stage before the project can commence. Thus, regardless of whether agencies choose to consult up front or to consult in stages, the Forest Service is likely to face significant legal hurdles when its CBM project "may affect" listed species.

CBM is not only legally dubious, but also unnecessary. The Forest Service already has NEPA-compliant methods to deal with situations that require a nimble response to the needs of a dynamic landscape. In these cases, the Forest Service can complete a single "programmatic" analysis to which future site-specific decisions will be tiered. This programmatic approach allows the Forest Service to speed the consideration and implementation of site-specific, step-down proposals. Unlike CBM, this

approach allows for public review of site-specific decision-making and administrative review of those decisions.

Surveying the regulatory horizon, the future of CBM in the Forest Service system is uncertain. The national forests face a host of complex challenges including climate-related crises, insect and forest pestilence, protecting and restoring biodiversity, and wildfire management. These challenges are made worse by budget and staff restrictions. Without adequate funding, the Forest Service must rely on imperfect tools like commercial logging, which can cause more harm than good in the wrong places.

But this is not the time to shortchange the most consequential decisions that the agency must make: determining where and how to act. During the final two years of the Trump administration, the Forest Service attempted to explicitly codify CBM provisions in revisions to its NEPA regulations, although those provisions were dropped from the final rule. Simultaneously, other federal land-management agencies like the Bureau of Land Management have started to use CBM analogues in their NEPA-related planning documents. Although it is still early, the Biden administration's newly appointed Council on Environmental Quality team has yet to weigh in on CBM. If use of CBM continues in a manner that undermines public participation and NEPA's "hard look" standard, some of our riskiest land management projects may not receive proper environmental oversight.

The project is not taking a hard look as required by NEPA. Please withdraw the EA until site specific prescriptions and unit boundaries are firmed up, then issue and take comments on an EIS with appropriate prescriptions.

Please find attached the Federal District Court of Alaska's ruling on condition-based management.

The EA does not provide site-specific information about the Sage Hen Project or its impacts. The EA does not disclose specific locations where logging, road construction, or prescribed burns will occur.

The Forest Service's failure to adequately disclose the specific locations where actions will occur under the Proposed Action or adequately analyze the environmental impacts of the Proposed Action violated NEPA. 42 U.S.C. § 4332(2)(C). The Forest Service's Decision Notice was therefore arbitrary, capricious, not in accordance with law, and not in accordance with the procedures required by law. 5 U.S.C. § 706(2)(A), (D).

The Forest Service responded:

Preparing an EIS for this project is not required. The Forest Service is required to take a "hard look" at the potential impacts of a project, and demonstrate that no significant impacts will result. IF the agency cannot demonstrate that, then it would need to prepare an EIS.

An EA is a "concise public document" that discusses whether or not an EIS needs to be prepared, and provides the evidence for that decision. No specific or minimum project size is required.

Remedy

Withdraw the EA, Draft Decision Notice and FONSI and write an EIS that takes a hard look at the impacts of the project and discloses specifically what, where and when the Forest Service wants to do. The project as proposed violated NEPA, NFMA, the Clean Water Act, the ESA and the APA.

The EA does not provide site-specific information about the Sage Hen Project or its impacts. The EA does not disclose specific locations where logging, road construction, or prescribed burns will occur.

The Forest Service's failure to adequately disclose the specific locations where actions will occur under the Proposed Action or adequately analyze the environmental impacts of the Proposed Action violated NEPA. 42 U.S.C. § 4332(2)(C). The Forest Service's Decision Notice was therefore arbitrary, capricious, not in accordance with law, and not in accordance with the procedures required by law. 5 U.S.C. § 706(2)(A), (D).

We wrote in our comments:

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.

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 absence of fire, this naturally occurring white- bark pine regeneration 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 regeneration 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 Forest Service responded:

Prescribed burning would only be used when existing vegetation conditions are in decline, as described by the Vegetation Condition-Based Management Guide, and is not currently proposed or anticipated in climax whitebark pine stands. Design features will be applied to protect individual trees and reduce overall negative effects to whitebark pine. Prescribed burning treatments are needed to reduce stressors (crowding and disease) and improve the likelihood for survival. When natural regeneration is not sufficiently occurring, whitebark pine plantings will be completed using blister rust resistant stock. A full analysis of both positive and negative effects to whitebark pine from prescribed burning is found in the 2024 Revised Sage Hen Biological Assessment Amendment.

Site specificity of commercial treatments and non-commercial treatments are provided in maps in the 2024 Vegetation, Fire and Fuels Effects Analysis Addendum (Figures 2 and 3). Some treatments, such as aspen enhancement, meadow restoration, and whitebark pine restoration are not outlined on the map because they are smaller components of treatments that are addressed during implementation. These treatment types are

addressed in Appendix C: Vegetation Condition-Based Management Guide.

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

REMEDY

Because the project will kill more than 125 whitebark pine trees you must consult with the Fish and Wildlife Service on the impact of the project and tell the public exactly where all the whitebark trees are. Do do this you first need to survey for whitebark pine.

Not all ecosystems or all Rocky Mountain landscapes have experienced the impacts of fire exclusion. In some wilderness 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 ecological factor. In some upper subalpine ecosystems, fires were important, 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 subalpine ecosystems.

Whitebark pine seedlings, saplings and mature trees, present in subalpine forests proposed 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 whitebark pine seedlings).

White pine blister rust, an introduced disease, has caused rapid 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.

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 attacked 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 absence of fire, this naturally occurring white- bark pine regeneration 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 region, 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 favorable ecological conditions for whitebark pine regeneration and growth, in the absence of sufficient seed source for natural regeneration maintaining the viability and function of whitebark pine would not be achieved through burning. Please find Keane and Arno attached.

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

What surveys have been conducted to determine presence and abundance of whitebark pine re-generation? It appears that you won't do surveys in violation of the ESA, NEPA, NFMA and the APA. 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?

Does the Boise N.F. have any forest plan biological assessment, biological opinion, incidental take statement, and management direction amendment for whitebark pine?

Please see the attached paper by Six et al 2021 Whitebark Genetics 2021. Six et at found:

Anthropogenic change is creating or enhancing a number of stressors on forests. To aid forests in adapting to these stressors, we need to move beyond traditional spacing and age- class prescriptions and take into account the genetic variability within and among populations and the impact our actions may have on adaptive potential and forest trajectories. Because so little is known about the genetic diversity in most forest trees, and because it is key to effective conservation, studies of genetic diversity and structuring in forest trees should be a top priority in forest adaptation and conservation efforts.

The project is not following the best available science and is not meeting the purpose and need. Since Whitebark pine are now proposed to be listed under the ESA, you must formally reconsult with the FWS on the impact of the

project on whitebark pine. To do this the Forest Service will need to have a complete and recent survey of the entire project area for whitebark pine and consider planting whitebark pine as the best available science by Keene et al. states is the only way to get new whitebark pine to grow. The Forest Service is incorrect when it states that the project will have “No significant effects would result from this project or cumulatively with other activities on National Forest or adjacent lands that would affect at-risk plant species’ ability to persist on the landscape.”

Since you have done no surveys of whitebark pine what is the basis of the “No effect” statement?

Please formally consult with the FWS on the impact of the project on Whitebark pine.

Since whitebark pine are very slow growing trees and take years to mature, what scientific evidence to you have to

back up the idea that the project will not effect whitebark

pine?

Six et al. 2014 also note:

The hypothesis that light has a strong effect on mountain pine beetle behavior, particularly in reducing attacks, has led to a new treatment called daylighting. This approach is currently being implemented on a broad scale by federal and western state agencies. Daylighting involves removing trees and vegetation from around trees that are targeted for retention and is believed to work by repelling beetles from the boles of trees by increasing light and solar radiation [117]. While widely recommended, the efficacy of this treatment is unknown; there are no published studies on its effects on bark beetles.

Six et al. 2014 found that beetles are selective in killing the least healthy trees but logging occurs without consideration of genetics.

Very importantly, the beetle exercises selectivity in the trees it kills. While extremely high numbers may override this selectivity, evidence is accumulating that, even under outbreak conditions, beetles choose trees that have particular qualities. Beetles commonly select trees for attack that exhibit lower growth rates, defenses, and higher water stress [58,74,77]. While these factors can be influenced both locally and regionally by site conditions and climate, much of the variation in these properties

within individual stands that affect bark beetle choice likely has a genetic basis. Outbreaks can result in strong natural selection against trees with phenotypes (and likely genotypes) favorable for the beetle and for those that possess unfavorable qualities [58,77]. However, when humans thin forests, trees are removed according to size, species, and density, without consideration of genetics. Thus, trees best adapted to surviving beetle outbreaks are as likely to be removed as those that are not.

When humans thin forests, they typically manage for resistance and resilience, rather than adaptation which involves genetic change. It is very important to distinguish between resistance, resilience, and adaptation, as each have different goals and operate on different temporal scales [140]. Resistance is a short-term holding action where we try to maintain an existing state. Approaches focusing on resistance often require massive interventions and increasing physical and financial investments over time. Such approaches may set forests up for future outbreaks [136] and even catastrophic failure as they surpass thresholds in a warming climate [140]. In contrast, practices that promote resilience attempt to allow forests the ability to adjust to gradual changes related to climate change and to recover after disturbance. However, like resistance, resilience is not a long-term solution. In the long term, forests must be able to adapt to change. Adaptation involves genetic change driven by natural selection. Currently, much of forest management, including bark beetle management, focuses on resistance and resilience, mainly through direct and indirect management,

respectively. However, neither approach allows for true adaptation. For long term continuity of our forests, it will be imperative to begin to incorporate this aspect of management into our approaches.

Six et al 2014 conclude: One of the biggest problems in assessing the utility of direct controls is a general lack of monitoring or post hoc assessments of the outcomes of implementing these practices. Despite decades of direct control and large-scale implementation of these practices, few rigorous studies on its efficacy have been done and there remains no agreement among scientists or foresters regarding its ability to reduce beetle populations or losses of trees. Studies conducted prior to the current outbreak have variously concluded that direct treatments may merely act to delay infestation of susceptible stands [97], or that if used correctly, can be effective [98,99]. Many studies found that while some treatments slowed the rate of infestation,

overall, they had little to no impact on mountain pine beetle populations [97,100–104].

Threaten and Endangered Species

We wrote in our comments:

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 required by the Forest Plan.

W. Please disclose how often the Project area has been surveyed for bull trout, chinook salmon, wolverines, pine martins, northern goshawks, and lynx.

X. Is it impossible for a bull trout, chinook salmon, wolverines, pine martins, northern goshawks, monarch butterflies, and whitebark pine to inhabit the Project area?

Y. Would the habitat be better for bull trout, chinook salmon, wolverines, pine martins, northern goshawks, monarch butterflies, and whitebark pine 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 martins, monarch butterflies, whitebark pine, northern goshawks, bull trout, and chinook salmon? Have you conducted ESA consultation?

AA. Please provide us with the full BA for the bull trout, bull trout critical habitat, chinook salmon, chinook salmon critical habtiat, wolverines, pine martins, northern goshawks, whitebark pine, and monarch butterflies.

The Forest Service responded:

The fisheries analysis would be exactly the same for an EIS as it would be for an EA. The WCIs from the Forest

Plan are analyzed in the 2024 Fisheries Report, see Section 4.3 Direct and Indirect Effects of the Proposed Action. Activities that could be allowed within the RCAs are discussed throughout the effects analysis sections of the Hydrology Reports, Fisheries Reports, 2020 Biological Assessment, and Biological Opinion. Changes to livestock grazing are not part of the proposed action, however it is considered under the Cumulative Effects analysis in the 2024 Fisheries Report (see Section 4.12).

Impacts to Canada lynx and wolverines are detailed in the Wildlife Technical Report, 2024 Biological Assessment Amendment and disclosed in the 2024 Revised EA/ FONSI.

The project is in violation of NEPA, NFMA, the ESA and the APA for not taking a hard look at the impact of the project on monarch butterflies, chinook salmon, bull trout, bull trout critical habitat, and wolverines. The public can not tell how the project will affect these species and their habitat if you refuse to tell the public what, where and when you plan to do.

REMEDY

Withdraw the EA, Draft Decision Notice and FONSI and formally consult with the U.S. Fish and Wildlife Service on the impact of the project on monarch butterflies, chinook

salmon, bull trout, bull trout critical habitat, and wolverines.

We wrote in our comments. “The agency has violated the NEPA and the NFMA because wildlife management was not identified as a purpose and need of the project.

It is not clear how vast acres of national forest lands can be intensively manipulated without a single wildlife management objective identified. This means that the agency cannot be meeting the NFMA requirements to maintain a diversity of wildlife. And it also means that the stated purpose and need is invalid, and a violation of the NEPA, because vegetation and fuels management have a direct impact on wildlife, which means that wildlife management also has to be included as a purpose and need. In effect, the purpose and need of the project is to remove wildlife habitat, but this is never identified to the public, in violation of the NEPA.

Fuels and wildlife habitat are one and the same.”

Please provide a specific list of wildlife habitat objectives that are being included in the purpose and need.

The Forest Plan has objectives and standards for wildlife habitat. These objectives need to be included in the stated purpose and need for the Sage Hen project. A project must comply with the entire Forest Plan, not just parts of it. There is no information in the scoping notice about the Forest Plan standards for wildlife, including for this project area. The agency the needs to identify how the project has been designed to meet these wildlife habitat needs required by the Forest Plan. The existing void between the agency's goals for the project, and wildlife habitat management required by the Forest Plan, need to be corrected. To not do so in a violation of NEPA, NFMA, the APA and the ESA.

We wrote in our comments:

5. The proposed project is a violation of the NEPA because it will be impossible for the general public to understand the specifics of this project, which will require up to 20 years to implement, or for the public to visit 67,000 acres in the next year.

This project is so large that it clearly prevents any meaningful public participation, and thus is a violation of the NEPA. Not only will the public be denied any specific information on project impacts on wildlife and wildlife habitat, but the public could not possibly do even a limited review of the proposed project on-the-ground. Although the project will be implemented in a piecemeal fashion, the

decision will not be implemented in this piecemeal fashion. The decision will exclude any future public input onthe project for the next 20 years. Eliminating public involvement for 20 years is clearly a violation of the NEPA. NEPA decisions are supposed to be timely, and to cover only 5 years. The proposed timeline of 20 years exceeds this NEPA directive by 4 times.

The proposed decision would violate the NEPA because many factors could change in 20 years, the proposed timeline of the decision.

As we noted above, the NEPA has an expected timeline of 5 years, since many factors could change not just in 5 years, but for a longer period of time. Planning a decision for a specific project for 20 years means that the actual impacts of the project cannot be predicted, since many environmental factors will likely change in that 20-year period. For example, a sensitive wildlife species that occurs in the project area may be listed as a threatened species, or as an Idaho Species of Concern. Of these examples of wildlife species may be identified with an increasing concern about their viability.

These changes need to be addressed on the ground, instead of more careful management of these species being prevented because a 20-year agency decision has been put into place. The flexibility of resource management is based on the NEPA expected timeliness factor of 5 years, and in

order for significant impacts to wildlife to be reasonably assessed, a project timeline cannot exceed 5 years."

The Forest Service responded: " By implementing activities at a landscape scale and using a condition-based management approach, the project optimizes biodiversity and maintains resilience and integrity, while increasing the options for management and allowing for endemic levels of disturbance. The project conserves and restores wildlife habitat for species dependent on low-elevation, old forest habitats within the nonlethal and mixed 1 fire regimes."

The Forest Service is still required to follow the law which says a project timeline cannot exceed 5 years.

Remedy: Please write an Environmental Impact Statement that fully complies with NEPA, NFMA, the APA and the ESA.

We wrote in our comments: "Please provide a map and the acreage of the areas occupied by the red squirrel and snowshoe hare. These are key prey species for many predators, including the wolverine, Canada lynx, pine marten, goshawk, great gray owl, and boreal owl. Also define what the restoration needs are for these 2 key prey species. How much habitat do they need in this project area, and where will this habitat be provided. Also, how

will habitat fragmentation be addressed to avoid severe impacts on the red squirrel and snowshoe hare?"

The Forest Service responded:

"Foraging habitat supports primary prey (snowshoe hare) and/or important alternate prey (especially red squirrels) that are available to lynx. Lynx primarily forage in early-seral forests comprised of dense saplings or in mature multi-layered forests. These areas maximize the availability of food and cover forsnowshoe hares at varying snow depths throughout the winter (ILBT 2013). The highest quality snowshoe hare habitats are those that support a high density of young trees or shrubs (1,821 stems or branches per ha [4,500/acre]), especially with branches that protrude above the snow levels. These conditions may occur in early successional stands following some type of disturbance or in older forests with a substantial understory of shrubs and young conifer trees. Red squirrel densities tend to be highest in mature cone-bearing forests with substantial quantities of coarse woody debris (Ruediger et al. 2000). Although snowshoe hares are the primary food of lynx throughout its range, they also rely on mice, squirrels, and grouse, especially during summer months (Ruggiero et al. 1994). Lynx are known to move long distances, but open areas, whether man-made or natural, will discourage use by lynx and disrupt their movements (Ruggiero et al. 1994; ILBT 2013). In general, suitable travel cover consists of coniferous or deciduous vegetation 0.61 meter (2 feet) taller than the average snowfall with a closed canopy that is

adjacent to foraging habitat. Most successional stages serve as travel cover, provided they offer vegetative cover in sufficient quantity and arrangement to allow for the movement of lynx. Narrow forested mountain ridges or plateaus may provide a linkage between more extensive areas of lynx habitat. Wooded riparian communities may provide travel cover across otherwise open valley floors between mountain ranges. Linkages may be provided by forest stringers that connect large forested areas or by low, forested passes that connect subalpine forests on opposite sides of a mountain range (Ruediger et al. 2000). Lynx avoid large open areas and, although they will cross openings less than 100 meters (330 feet) wide, they do not hunt in these areas. Travel cover allows for movement of lynx within their home ranges and provides access to denning sites and foraging habitats.

Home range size varies considerably and is usually dependent upon prey base availability. Mean annual home range size reported for southern Canada and the lower 48 states vary between 39 to 277 km2 (15 to 107 mi2) ([Apps 2000; Squires and Laurion 2000; Koehler 1990] as referenced in ILBT 2013). In each of the referenced studies, female home ranges (15-52 mi2) were smaller than those reported for males (27-107 mi2). Lynx movement and dispersal distances vary greatly. Documented daily movement distances have varied from 2.58 to 5.15 km (1.6 miles to 3.1 miles) depending upon prey densities. Squires and others (2013) more recently reported an average daily

movement rate of 4.2 miles per day for GPS collared lynx in Montana. Exploratory movements, usually in summer months and outside of identified home range boundaries, have varied between 14.48 and 40.23 km (9 and 25 miles) (ILBT 2013). Both adult and sub-adults have been documented making long distance movements during periods of prey scarcity. Recorded distances have been up to 1,000 km (620 miles) (ILBT 2013). On the Boise National Forest, vegetative communities that could provide source habitat conditions include PVGs 3, 7, 8, 9, 10, and 11 (Nutt et al. 2010, appendix 7). These are the PVGs capable of developing characteristics of source habitat as described in the literature. Source habitat capacity occurs

primarily in mixed 2 and lethal fire regimes where large fires historically played a natural process role, creating an ebb and flow of lynx habitat across the landscape through time. Down logs and root wads are a special habitat feature for lynx (Wisdom et al. 2000, Ruggiero et al. 1999, Koehler 1990) and provide important natal and maternal denning sites. Designated Critical Habitat: U.S. Fish and Wildlife Service (USFWS) published its final rule on the revised designation of Critical Habitat for the contiguous U.S. Distinct Population Segment of Canada lynx on September 12, 2014 (FR Vol. 79, No. 177, 54782-54846). The rule became effective on October 14, 2014. Boise National Forest does not fall within Designated Critical

Habitat.Core, Secondary, and Peripheral Areas: USFWS categorized lynx habitat and occurrence into one of three classifications (core areas, secondary areas, and peripheral areas) based on a review of historical and recent evidence (USDI FWS 2005 [Canada Lynx Recovery Outline]). Core Areas have the strongest long-term evidence of the persistence of lynx populations within the contiguous United States. Core Areas have both persistent, verified records of lynx occurrence over time and recent evidence of reproduction. Secondary Areas are those with historical records of lynx presence with no record of reproduction, or with no recent surveys to document lynx presence or reproduction. Secondary areas may contribute to lynx persistence by providing habitat to support lynx during dispersal movements or other periods, allowing lynx to return to core areas. In Peripheral Areas, historical records are sporadic and generally correspond to periods following cyclic population highs in Canada. Peripheral areas have no evidence of long-term presence or reproduction; however, some may provide habitat enabling the successful dispersal of lynx between populations or subpopulations. The role of secondary and peripheral areas in sustaining lynx populations remains unknown. Boise National Forest lynx habitat is within a large block identified as a secondary area, situated between the Northwestern Montana/ Northeastern Idaho core area and the Greater Yellowstone core area (ILBT 2013, figure 3.1), and part of the Northern Rocky Mountains geographic area.Northern Rocky Mountains Geographic Area: The Canada Lynx

Conservation Assessment and Strategy was updated in 2013 (ILBT 2013) and summarizes lynx populations, habitat, and connectivity by geographic area. The Northern Rocky Mountains geographic area is a large and diverse region. Strong climate gradients occur, and vegetation varies from moist, dense conifer forests, to less productive forests with greater interspersion of grasslands and shrublands. Maintaining connectivity with Canada and between mountain ranges is an important consideration (ILBT 2013, page 60)." (Wildlife Technical Report for the Sage Hen Integrated Restoration Project, pp. 127-128).

Livestock grazing (and trampling) has the potential to reduce the re-generation of aspen, conifer, and willow communities, which in turn could reduce the amount and quality of snowshoe hare habitat. This was not analyzed in the EA in violation of NEPA, NFMA, the ESA and the APA.

Page 3-47 of the South Fork and Watkins EA in the Gallatin N.F. states: "Livestock grazing (and tram-
pling) has the potential to reduce the regeneration of aspen, conifer, and willow communities, which in turn could reduce the amount and quality of snowshoe hare habitat."

The Forest Service Must Formally Consult with the FWS on Lynx. Lynx critical habitat was ruled illegal by the federal district court and there could be lynx critical habitat in the project area when the new lynx critical habitat that complies with the law is designated.

The Forest Plan says that the Forest will survey all areas for lynx. This was not done in violation of the Forest Plan.

The agencies concede that the Project is likely to adversely affect the lynx. However, FWS failed to prepare a biological opinion for the Project. Instead, the agencies rely on 5-year old biological opinion for the Region-wide Northern Rockies Lynx Management Direction. This Region-wide programmatic biological opinion cannot and does not adequately substitute for a Project-specific biological opinion.

The agencies' failure to complete ESA consultation before authorizing and implementing the Project violates the ESA.

Additionally, the programmatic biological opinion relied upon does not address all the relevant factors for the Project and is not based on best available science.

The Agencies Must Complete A New Biological Assessment, Bio-
logical Opinion, Incidental Take Statement, And Lynx Management Direction Amendment For The Forest Plan For Lynx.

The agencies do not have in place a legally and scientifically adequate biological assessment, biological opinion, and incidental take statement for lynx for the

Forest Plan for the Boise National Forest (BNF). Although the
agencies rely on the Forest Plan amendment appending the Northern Rockies Lynx Management Direction to the BNF Forest Plan, those amendments are inadequate. The amendments fail to consider important factors and fail to use the best available science on necessary lynx habitat elements, including but not limited to, failing to include standards that protect key winter habitat.

The Agencies Must Reinitiate Consultation On The Northern Rockies Lynx Management Direction.The Northern Rockies Lynx Management Direction is inadequate to ensure conservation and recovery of lynx. The amendments fail to use the best available science on necessary lynx habitat elements, including but not limited to, failing to include standards that protect key winter habitat. Continued im-plementation of the Forest Plan constitutes a "taking" of the lynx.

Such taking can only be authorized with an incidental take state-
ment, issued as part of a Biological Opinion (B.O.) during of Section 7 consultation. The BNF must incorporate terms and conditions from a programmatic B.O. into a Forest Plan amendment or revision before projects affecting lynx habitat, such as this one, can be authorized.

The project will harm lynx habitat. Page 142 of the wildlife report states: "The Sage Hen project is in the West

Mountain LAU. Lynx foraging habitat exists mostly within the Snowbank IRA. Planned prescribed burning in the IRA will emulate natural fire processes for PVGs in the Mixed2 fire regime. Some foraging habitat will be reduced within burned patches but cover and food for snowshoe hares will remain distributed on the landscape in patterns similar to pre-fire. This change will not retard attainment of the desired lynx habitat of 70 percent or more lynx habitat in a LAU. An analysis was conducted to ensure the amount of habitat in the LAU remains at or above 70 percent."

Because the BNF did not do any wildlife surveys for lynx, the Forest Service has no idea if lynx use the LAUs or not. The project is therefore in violation of NEPA, NFMA, the Forest Plan, the ESA and the APA.

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).

- The EA fails to consider and use the best available science and fails to insure population viability in violation of NFMA and additionally, violating 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 or lynx populations at the Forest level, projects will continue to degrade wolverine habitat across the Boise NF over time.

There is not an adequate regulatory mechanism to protect lynx and lynx critical habitat if there is no restriction on burning lynx critical habitat. The project is therefore in violation of NEPA, NFMA, the APA and the ESA. The draft decision is arbitrary.

The Forest Service's misrepresentations to the public, failure to use the Forest Plan Lynx Amendment definition of wildland urban interface, and failure to establish

compliance with Lynx Amendment standards VEGS2 and VEGS5, violates NEPA, NFMA, and the APA.

Please see the attached paper titled: "Management of forests and forest carnivores: Relating landscape mosaics to habitat quality of Canada lynx at their range periphery" by Holbrook et al. 2019. It states that all lynx habitat has to be monitored for lynx. The EA states that the project area was no monitored for lynx. This is a violation of NEPA, NFMA, the APA and the ESA.

Remedy: Choose the No Action Alternative or withdraw the DDN and FONSI, and write an Environmental Impact Statement that follows the best available science which is Beschta et al. 2014 and it recommends to close this area to livestock grazing as the best way to let the aspen recover and consult with the FWS on the affects of the project on lynx.

We wrote in our comments:
"21. The habitat for the threatened bull trout, including critical habitat, is not identified in the scoping notice; this important information needs to be identified to the public in a scoping notice, including specific information on

how habitat for this threatened fish has been managed in the past; it seems highly likely that this project represents a violation of the Endangered Species Act (ESA) in regards to bull trout.

Bull trout are not doing well in most of the waterways they occupy. The scoping notice needs to address the current status of this threatened species in the project area, and what any of the ongoing problems are believe to be. Then the scoping notice needs to define how these problems will be corrected, or fish habitat quality "restored," with this proposal. It seems highly unlikely that this project will benefit the bull trout in any manner, given the massive sedimentation that will be caused from building vast miles of new roads, along with vast acres of logging and prescribed burning.

Overall, it is not clear how this restoration project has been designed with
bull trout in mind."

The Forest Service responded: "Project activities could affect bull trout and its critical habitat" (EA,p.49).

Since the project is likely to adversely effect bull trout and bull trout critical habitat, please formally consult with the Fish and Wildlife Service on the impact of the project on bull trout.

The EIS must fully and completely analyze the impacts to bull trout critical habitat and westslope cutthroat trout habitat. What is the standard for sediment in the Forest Plan? Sediment is one of the key factors impacting water quality and fish habitat. [See USFWS 2010]

The introduction of sediment in excess of natural amounts can have multiple adverse effects on bull trout and their habitat (Rhodes et al. 1994, pp. 16-21; Berry, Rubinstein, Melzian, and Hill 2003, p. 7). The effect of sediment beyond natural background conditions can be fatal at high levels. Embryo survival and subsequent fry emergence success have been highly correlated to percentage of fine material within the stream-bed (Shepard et al. 1984, pp. 146, 152). Low levels of sediment may result in sublethal and behavioral effects such as increased activity, stress, and emigration rates; loss or reduction of foraging capability; reduced growth and resistance to disease; physical abrasion; clogging of gills; and interference with orientation in homing and migration (McLeay et al. 1987a, p. 671; Newcombe and MacDonald 1991, pp. 72, 76, 77; Barrett, Grossman, and Rosenfeld 1992, p. 437; Lake and Hinch 1999, p. 865; Bash et al. 2001n, p. 9; Watts et al. 2003, p. 551; Vondracek et al. 2003, p. 1005; Berry, Rubinstein, Melzian, and Hill 2003, p. 33). The effects of increased suspended sediments can cause changes in the abundance and/or type of food organisms, alterations in fish habitat, and long-term impacts to fish populations (Anderson et al. 1996, pp. 1, 9, 12, 14, 15; Reid and

Anderson 1999, pp. 1, 7-15). No threshold has been determined in which fine sediment addition to a stream is harmless (Suttle et al. 2004, p. 973). Even at low concentrations, fine-sediment deposition can decrease growth and survival of juvenile salmonids.

Aquatic systems are complex interactive systems, and isolating the effects of sediment to fish is difficult (Castro and Reckendorf 1995d, pp. 2-3). The effects of sediment on receiving water ecosystems are complex and multi-dimensional, and further compounded
by the fact that sediment flux is a natural and vital process for aquatic systems (Berry, Rubinstein, Melzian, and Hill 2003, p. 4). Environmental factors that affect the magnitude of sediment impacts on salmonids include duration of exposure, frequency of exposure, toxicity, temperature, life stage of fish, angularity and size of particle, severity/ magnitude of pulse, time of occurrence, general condition of biota, and availability of and access to refugia (Bash et al. 2001m, p. 11). Potential impacts caused by excessive suspended sediments are varied and complex and are often masked by other concurrent activities (Newcombe 2003, p. 530). The difficulty in determining which environmental variables act as limiting factors has made it difficult to establish the specific effects of sediment impacts on fish (Chapman 1988, p. 2). For example, excess fines in spawning gravels may not lead to smaller populations of adults if the amount of juvenile winter habitat limits the number of juveniles that reach adulthood. Often there are

multiple independent variables with complex inter-relationships that can influence population size.

The ecological dominance of a given species is often determined by environmental variables. A chronic input of sediment could tip the ecological balance in favor of one species in mixed salmonid populations or in species communities composed of salmonids and nonsalmonids (Everest et al. 1987, p. 120). Bull trout have more spatially restrictive biological requirements at the individual and population levels than other salmonids (USFWS (U.S. Fish and Wildlife Service) 1998, p. 5). Therefore, they are especially vulnerable to environmental changes such as sediment deposition.

Aquatic Impacts

• Classify and analyze the level of impacts to bull trout and westslope cutthroat trout in streams, rivers and lakes from sediment and other habitat alterations:

Lethal: Direct mortality to any life stage, reduction in egg-to-fry survival, and loss of spawning or rearing habitat. These effects damage the capacity of the bull trout to produce fish
and sustain populations.

Sublethal: Reduction in feeding and growth rates, decrease in habitat quality, reduced tolerance to disease and toxicants, respiratory impairment, and physiological stress. While not leading to immediate death, may produce mortalities and population decline over time.

Behavioral: Avoidance and distribution, homing and migration, and foraging and predation. Behavioral effects change the activity patterns or alter the kinds of activity usually associated with an unperturbed environment. Behavior effects may lead to immediate death or population decline or mortality over time.

Direct effects:
Gill Trauma - High levels of suspended sediment and turbidity can result in direct mortality of fish by damaging and clogging gills (Curry and MacNeill 2004, p. 140).

Spawning, redds, eggs - The effects of suspended sediment, deposited in a redd and potentially reducing water flow and smothering eggs or alevins or impeding fry emergence, are related to sediment particle sizes of the spawning habitat (Bjornn and Reiser 1991, p. 98).

Indirect effects:
Macroinvertebrates - Sedimentation can have an effect on bull trout and fish populations through impacts or alterations to the macroinvertebrate communities or populations (Anderson, Taylor, and Balch 1996, pp. 14-15).

Feeding behavior - Increased turbidity and suspended sediment can affect a number of factors related to feeding for salmonids, including feeding rates, reaction distance, prey selection, and prey abundance (Barrett, Grossman, and

Rosenfeld 1992, pp. 437, 440; Henley, Patterson, Neves, and Lemly 2000, p. 133; Bash et al. 2001d, p. 21).

Habitat effects - All life history stages are associated with complex forms of cover including large woody debris, undercut banks, boulders, and pools. Other habitat characteristic important to bull trout include channel and hydrologic stability, substrate composition, temperature, and the presence of migration corridors (Rieman and McIntyre 1993, p. 5).

Physiological effects - Sublethal levels of suspended sediment may cause undue physiological stress on fish, which may reduce the ability of the fish to perform vital functions (Cederholm and Reid 1987, p. 388, 390).

Behavioral effects - These behavioral changes include avoidance of habitat, reduction in feeding, increased activity, redistribution and migration to other habitats and locations, disruption of territoriality, and altered homing (Anderson, Taylor, and Balch 1996, p. 6; Bash et al. 2001t, pp. 19-25; Suttle, Power, Levine, and McNeely 2004, p. 971).

• How will this project affect native fish? What is the current condition in the riparian areas?
How will this project protect rather than adversely impact fish habitat and water quality? No logging or road building should be done in riparian areas. There should not be any

stream crossings. Roads should be decommissioned and removed, not upgraded and rebuilt.

• Hauer, et al. (1999) found that bull trout streams in wilderness habitats had consistent ratios of large to small and attached to unattached large woody debris. However, bull trout streams in watersheds with logging activity had substantial variation in these ratios. They identified logging as creating the most substantive change in stream habitats.

"The implications of this study for forest managers are twofold: (i) with riparian logging comes increased unpredictability in the frequency of size, attachment, and stability of the LWD and (ii) maintaining the appropriate ratios of size frequency, orientation, and bank attachment, as well as rate of delivery, storage, and transport of LWD to streams, is essential to maintaining historic LWD characteristics and dynamics. Our data suggest that exclusion of logging from riparian zones may be necessary to maintain natural stream morphology and habitat features. Likewise, careful upland management is also necessary to prevent cumulative effects that result in altered water flow regimes and sediment delivery regimes. While not specifically evaluated in this study, in general, it appears that patterns of upland logging space and time may have cumulative effects that could additionally alter the balance of LWD delivery, storage, and transport in fluvial systems.

These issues will be critical for forest managers attempting to prevent future detrimental environmental change or setting restoration goals for degraded bull trout spawning streams."

Muhlfeld, et al. (2009) evaluated the association of local habitat features (width, gradient, and elevation), watershed characteristics (mean and maximum summer water temperatures, the number of road crossings, and road density), and biotic factors (the distance to the source of hybridization and trout density) with the spread of hybridization between native westslope cutthroat trout Oncorhynchus clarkii lewisi and introduced rainbow trout O. mykiss in the upper
Flathead River system in Montana and British Columbia.

They found that hybridization was positively associated with mean summer water temperature and the number of upstream road crossings and negatively associated with the distance to the main source of hybridization. Their results suggest that hybridization is more likely to occur and spread in streams with warm water temperatures, increased land use disturbance, and proximity to the main source of hybridization.

The EIS must use the best available science to analyze how logging riparian habitat will impact native fish and water quality.

The following article from the 9/25/15 Missoulian disagrees with the Forest Service and says it is habitat destruction causing bull trout declines.

http://missoulian.com/news/local/montana-fwp-biologist-despite-successes-bull-trout-populations-still-in/article_2798e4c6-0658-522f-be4c-4274f903129e.html

Montana FWP biologist: Despite successes, bull trout populations still in peril Ladd Knotek is disturbed by the lack of attention being paid to the many western Montana streams where bull trout populations are struggling to survive.

The fisheries biologist with Montana Fish, Wildlife and Parks knows people love to latch on to the success stories from streams like Fish Creek and several Blackfoot tributaries, where bull trout populations are viable.

"But what nobody talks about is all these other populations that, 50 years ago, these were all viable populations,"
he said Tuesday as part of a presentation on bull trout in Rattlesnake Creek. "You know, Gold Creek, Belmont Creek,
Trout Creek, there's a whole list of them. There's a whole bunch of them that are just basically on the verge of disappearing. And what we like to talk about are the ones

that are doing OK. But in places like Lolo Creek and some
Bitterroot tributaries, bull trout there are just barely hanging on."

Bull trout have faced a long, slow decline over the past century, to the point where they are now listed as a threatened species under the Endangered Species Act. Success is
a relative term even in the places where they are doing well.

"They're nowhere near what they were historically," Knotek said of the tributaries where the populations are relatively healthy. "But they have a fair number of adult spawners coming in. People see them in the fishery. But we
need to start looking at all these other tributaries that used
to be bull trout spawning tributaries and recognize what's going on in the bigger picture. We're just looking at a very
thin slice instead of looking at the whole thing. A lot of this
stuff is just symptoms of what's going on at the larger scale.
Bull trout are the canary. They're very susceptible to environmental change, whether it's temperature, whether it's physical, whether it's sediment. There's something

going on in these drainages and the symptoms we're seeing are the bull trout distribution is shrinking, we're losing populations and we're seeing expansion of nonnatives."

Bull trout – which are native to the Columbia River Basin and are only found west of the Continental Divide in Montana – need clear, cold mountain waters to spawn and require clean gravel beds, deep pools, complex cover, good in-stream flows in the fall and large systems of interconnected waterways for their migrations. Rising temperatures and falling water levels trigger their migration to spawning tributaries in June, and they hang out until they spawn in the fall. They are much more susceptible to warming temperatures and habitat change than nonnative species such as brown and rainbow trout.

Knotek was the featured presenter Friday for a discussion on restoration efforts and the importance of Rattlesnake Creek as a bull trout habitat. The event was organized by the Clark Fork Coalition, a nonprofit in Missoula that aims to protect water quality for the 22,000-square-mile Clark Fork River Basin.

Knotek explained that because Rattlesnake Creek is south-
facing and doesn't have much groundwater recharging, it has much less of a buffer against a warming climate than other streams.

"The water temperatures are significantly higher than they
were 10 years ago," he said. "The types of temperatures we're seeing in late summer and early fall, we never saw those 10 to 15 years ago. Water temperature is driving a lot
of what we're talking about. It's definitely stressful on fish.
It doesn't spell good news for bull trout."

Knotek said it's a common misconception that brown trout
and rainbows are driving out bull trout, and he explained that those nonnative species are simply moving in because the native species is dying off.

"It's replacement rather than displacement," he said.

In Rattlesnake Creek, biologists have conducted redd counts of the migratory population in the lower reaches since 1999. There is a healthy resident population in the upper reaches, but researchers are more interested in the

fish that actually migrate to the Clark Fork River.

The results have been disturbing.

They found a high of 36 in 2006 and 24 in 2008, before Milltown Dam was removed. There was an expected drop to
just four redds – spawning beds – after the dam was removed in 2009, because of the massive disturbance. However, the number of redds has not bounced back since,
and researchers found just six last year.

"That tells us that it wasn't just the dam removal that caused it, because they should be recovering by now," Knotek said. "And there are lots of populations like this stream that are not doing well but need more attention. We've got a problem here, but it's not inconsistent with other tributaries. There's something bigger going on."

Knotek said that Rattlesnake Creek was historically braided before the area was developed, and that eliminated a lot of the back channels the juvenile fish need to grow.

"You need complexity," he said. "When you have a straight
ditch in a system that used to be braided, it ain't good."

He's also seen much more algae growth in the upper sections, something that is obviously related to higher temperatures and added nutrients.

"We have browns and rainbows progressing upstream, and we attribute that to water temperature," he said. "That's consistent with other streams, too. It's very obvious something is going on here."

Knotek believes that a "ramping up" of current conservation work is the only thing that can save bull trout populations. Fish screens, the removal of dams, awareness of anglers and water conservation – especially by people using stream irrigation to water their lawns – is crucial.

"Bull trout are the canary," he said. "But there are a lot of other species that we could be looking at as indicators as well. A lot of research needs to be done. There's a lot of species being affected."

As Knoteck pointed out, bull trout need clear, cold mountain waters to spawn and require clean gravel beds, deep pools, complex cover, good in-stream flows in the fall and large systems of interconnected waterways for their migrations.

The project is in violation of the Clearwater Act, NFMA, NEPA, the ESA, the Forest Plan and the APA because it the project is not working to recover bull trout and bull trout critical habitat. Sediment and stream degradation from the on going grazing is not addresses and the project will put more sediment into bull trout habitat.

Critical habitat receives protection under section 7 of the Endangered Species Act through the prohibition against destruction or adverse modification of critical habitat with regard to actions carried out, funded, or authorized by a Federal agency. There is no exception for the short run.

The EA does not characterize or evaluate the project area watersheds based on the Watershed Condition Framework or the baseline condition developed for bull trout. We do not know what the current condition of streams are in the project area, i.e., are they functioning acceptably, at risk or at unacceptable risk? And for what ecosystem parameters? How will this project affect stream function, i.e., degrade, maintain, restore?

- The project relies on BMPs to protect water quality and fish habitat. First, there is no evidence that application of BMPs actually protects fish habitat and water quality.
- Second, BMPs are only maintained on a small percentage of roads or when there is a logging project.

BMPs fail to protect and improve water quality because of the allowance for "naturally occurring degradation." In Montana, "naturally-occurring degradation" is defined in ARM 16.20.603(11)
as that which occurs after application of "all reasonable land, soil and water conservation practices have been applied." In other words, damage caused directly by sediment (and other pollution) is acceptable as long as BMPs are applied. The result is a never-ending, downward spiral for water quality and native fish.
Here's how it works:

- Timber sale #1 generates sediment damage to a bull trout stream, which is "acceptable" as long as BMPs are applied to project activities.
- "Natural" is then redefined as the stream condition after sediment damage caused by Timber Sale #1.
- Timber sale #2 – in the same watershed – sediment damage would be acceptable if BMPs are
applied again – same as was done before.
- "Natural" is again redefined as the stream condition after sediment damage caused by Timber
Sale#2.

The downward spiral continues with disastrous cumulative effects on bull trout, westslope cutthroat trout and most aquatic life. BMPs are not "reasonable." Clearly, beneficial uses are not being protected. In Montana, state water quality policy is not being followed. § 75-5-101 et seq. and ARM 16.20.701 et seq.

• The EA does not include an analysis of climate change and how that will impact the project.
• The Purpose and Need for this project is solely to prop up the timber industry at the expense of
wildlife, fish and water quality. This project is a money-loser, the logging portion should be
dropped and the road decommissioning in Alternative 4 should be implemented.

The U.S. Fish and Wildlife Service found that bull trout are exceptionally sensitive to the direct, indirect, and cumulative effects of roads. Dunham and Rieman demonstrated that disturbance from roads was associated with reduced bull trout occurrence. They concluded that conservation of bull trout should involve protection of larger, less fragmented, and less disturbed (lower road density) habitats to maintain important strongholds and sources for naturally recolonizing areas where populations have been lost. (USFS 2000, page 3-82.

Hitt and Frissell showed that over 65% of waters that were rated as having high aquatic biological integrity were found within wilderness-containing subwatersheds.

Trombulak and Frissell concluded that the presence of roads in an area is associated with negative effects for both terrestrial and aquatic ecosystems including changes in species composition and population size. (USFS 2000, pages 3-80-81).

"High integrity [forests] contain the greatest proportion of high forest, aquatic, and hydrologic integrity of all are dominated by wilderness and roadless areas [and] are the least altered by management. Low integrity [forests have] likely been altered by past management are extensively roaded and have little wilderness." (USFS 1996a,

pages 108, 115 and 116).

"Much of this [overly dense forest] condition occurs in areas of high road density where the large, shade-intolerant, insect-, disease- and fire-resistant species have been harvested over the past 20 to 30 years. Fires in unroaded areas are not as severe as in the roaded areas because of less surface fuel, and after fires at least some of the large trees survive to produce seed that regenerates the area. Many of the fires in the unroaded areas produce a forest structure that is consistent with the fire regime, while the

fires in the roaded areas commonly produce a forest structure that is not in sync with the fire regime. In general, the effects of wildfires in these areas are much lower and do not result in the chronic sediment delivery hazards exhibited in areas that have been roaded." (USFS 1997a, pages 281-282).

"Increasing road density is correlated with declining aquatic habitat conditions and aquatic integrity An intensive review of the literature concludes that increases in sedimentation [of streams] are unavoidable even using the most cautious roading methods." (USFS 1996b, page 105).

"This study suggests the general trend for the entire Columbia River basin is toward a loss in pool habitat on managed lands and stable or improving conditions on unmanaged lands." (McIntosh et al 1994).

"The data suggest that unmanaged systems may be more structurally intact (i.e., coarse woody debris, habitat diversity, riparian vegetation), allowing a positive interaction with the stream processes (i.e., peak flows, sediment routing) that shape and maintain high-quality fish habitat over time." (McIntosh et al 1994).

"Although precise, quantifiable relationships between long-term trends in fish abundance and land-use practices are difficult to obtain (Bisson et al. 1992), the body of literature concludes that land-use practices cause the simplification of fish habitat.” (McIntosh et al 1994).

"Land management activities that contributed to the forest health problem (i.e., selective harvest and fire suppression) have had an equal or greater effect on aquatic ecosystems.

If we are to restore and maintain high quality fish habitat, then protecting and restoring aquatic and terrestrial ecosystems is essential." (McIntosh et al 1994).

"Native fishes are most typically extirpated from waters that have been heavily modified by human activity, where native fish assemblages have already been depleted, disrupted, or stressed []." (Moyle et al 1996).

"Restoration should be focused where minimal investment can maintain the greatest area of high-quality habitat and diverse aquatic biota. Few completely roadless, large watersheds remain in the Pacific Northwest, but those that continue relatively undisturbed are critical in sustaining sensitive native species and important ecosystem processes

(Sedell, et. al 1990; Moyle and Sato 1991; Williams 1991; McIntosh et al. 1994;

Frissell and Bayles 1996). With few exceptions, even the least disturbed basins have a road network and history of logging or other human disturbance that greatly magnifies the risk of deteriorating riverine habitats in the watershed." (Frissell undated). Also please see the attached comments by Frissell on the bull trout recovery plan.

"[A]llocate all unroaded areas greater than 1,000 acres as Strongholds for the production of clean water, aquatic and riparian-dependent species. Many unroaded areas are isolated, relatively small, and most are not protected from road construction and subsequent timber harvest, even in steep areas. Thus, immediate protection through allocation of the unroaded areas to the production of clean water, aquatic and riparian-dependent resources is necessary to prevent degradation of this high quality habitat and should not be postponed." (USFWS et al 1995).

"Because of fire suppression, timber harvest, roads, and white pine blister rust, the moist forest PVG has experienced great changes since settlement of the project

area by Euroamericans. Vast amounts of old forest have converted to mid seral stages."(USFS/BLM 2000, page 4-58).

"Old forests have declined substantially in the dry forest PVG []. In general, forests showing the most change are those that have been roaded and harvested. Large trees, snags, and coarse woody debris are all below historical levels in these areas."

(USFS/BLM 2000, page 4-65).

"High road densities and their locations within watersheds are typically correlated with areas of higher watershed sensitivity to erosion and sediment transport to streams. Road density also is correlated with the distribution and spread of exotic annual grasses, noxious weeds, and other exotic plants. Furthermore, high road densities are correlated with areas that have few large snags and few large trees that are resistant to both fire and infestation of insects and disease. Lastly, high road densities are correlated with areas that have relatively high risk of fire occurrence (from human caused fires), high hazard ground

fuels, and high tree mortality." (USFS 1996b, page 85, parenthesis in original).

In simpler terms, the Forest Service has found that there is no way to build an environmentally benign road and that roads and logging have caused greater damage to forest ecosystems than has the suppression of wildfire alone. These findings indicate that roadless areas in general will take adequate care of themselves if left alone and unmanaged, and that concerted reductions in road densities in already roaded areas are absolutely necessary.

Indeed, other studies conducted by the Forest Service indicate that efforts to “manage" our way out of the problem are likely to make things worse. By "expanding our efforts in timber harvests to minimize the risks of large fire, we risk expanding what are well established negative effects on streams and native salmonids. The perpetuation or expansion of existing road networks and other activities might well erode the ability of [fish] populations to respond to the effects of large scale storms and other disturbances that we clearly cannot change." (Reiman et al 1997).

The following quotes demonstrate that trying to restore lower severity fire regimes and forests through logging and other management activities may make the situation worse, compared to allowing nature to reestablish its own equilibrium. These statements are found in “An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins, Volume 3 (ICBEMP):

“Since past timber harvest activities have contributed to degradation in aquatic ecosystems, emphasis on timber harvest and thinning to restore more natural forests and fire regimes represent risks of extending the problems of the past.” (ICBEMP page 1340).

“Proposed efforts to reduce fuel loads and stand densities often involve mechanical treatment and the use of prescribed fire. Such activities are not without their own drawbacks -- long-term negative effects of timber harvest activities on aquatic ecosystems are well documented (see this chapter; Henjum and others 1994; Meehan 1991; Salo and Cundy 1987).” (ICBEMP page 1340).

“Species like bull trout that are associated with cold, high elevation forests have probably persisted in landscapes that were strongly influenced by low frequency, high severity fire regimes. In an evolutionary sense, many native fishes are likely well acquainted with large, stand-replacing fires.” (ICBEMP page 1341).

“Attempts to minimize the risk of large fires by expanding timber harvest risks expanding the well-established negative effects on aquatic systems as well. The perpetuation or expansion of existing road networks and other activities might well erode the ability of populations to respond to the effects of fire and large storms and other disturbances that we cannot predict or control (National Research Council 1996). (ICBEMP page 1342).

“Watersheds that support healthy populations may be at greater risk through disruption of watershed processes and degradation of habitats caused by intensive management than through the effects of fire.” (ICBMP page 1342).

"Timber harvest, through its effects on forest structure, local microclimate, and fuels accumulation, has increased fire severity more than any other recent human activity. If

not accompanied by adequate reduction of fuels, logging (including salvage of dead and dying trees) increases fire hazard by increasing surface dead fuels and changing the local microclimate. Fire intensity and expected fire spread rates thus increase locally and in areas adjacent to harvest". (USFS 1996c, pages 4-61-72).

"Logged areas generally showed a strong association with increased rate of spread and flame length, thereby suggesting that tree harvesting could affect the potential fire behavior within landscapes...As a by-product of clearcutting, thinning, and other tree-removal activities, activity fuels create both short- and long-term fire hazards to ecosystems. Even though these hazards diminish over time, their influence on fire behavior can linger for up to 30 years in dry forest ecosystems of eastern Oregon and Washington". (Huff et al 1995).

The answer, therefore, is not to try managing our way out of this situation with more roads and timber harvest/ management. In summary:

• Roads have adverse effects on aquatic ecosystems. They facilitate timber sales which can reduce riparian cover,

increase water temperatures, decrease recruitment of coarse woody debris, and disrupt the hydrologic regime of watersheds by changing the timing and quantity of runoff. Roads themselves disrupt hydrologic processes by intercepting and diverting flow and contributing fine sediment into the stream channels which clogs spawning gravels. High water temperatures and fine sediment degrade native fish spawning habitat.

According to the U.S. Forest Service 82% of all bull trout populations and stream segments range-wide are threatened by degraded habitat conditions. Roads and forest management are a major factor in the decline of native fish species on public lands in the Northern Rockies and Pacific Northwest.

- An open road density (ORD) of one mile per square mile of land reduces elk habitat effectiveness to only 60% of potential. When ORD increases to six miles per square mile, habitat effectiveness for elk decreases to less than 20%. (Lyon 1984).

Remedy: Withdraw the draft decision and write an Environmental Impact Statement that fully complies with the law.

We wrote in our comments:
"As we noted above, the NEPA has an expected timeline of 5 years, since many factors could change not just in 5 years, but for a longer period of time. Planning a decision for a specific project for 20 years means that the actual impacts of the project cannot be predicted, since many environmental factors will likely change in that 20-year period. For example, a sensitive wildlife species that occurs in the project area may be listed as a threatened species, or as an Idaho Species of Concern. Of these examples of wildlife species may be identified with an increasing concern about their viability.
These changes need to be addressed on the ground, instead of more careful management of these species being prevented because a 20-year agency decision has been put into place. The flexibility of resource management is based on the NEPA expected timeliness factor of 5 years, and in order tor significant impacts to wildlife to be reasonably assessed, a project timeline cannot exceed 5 years."

The Forest Service did not respond to our comment in violation of NEPA and the APA.

Remedy: Write an EIS that complies with the law.

Whitebark Pine

We wrote in our March 13, 2020 comments:

“Why are you trying to exclude stand replacement fires when these fires help aspen and whitebark pine?

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

“Please disclose whether you have conducted surveys in the Project area for this Project for whitebark pine, wolverines, pine martins, northern goshawk and lynx, as required by the ForestPlan.”

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

The Forest Service responded: “Proposed ground-disturbing and prescribed fire activities may directly or indirectly impact known populations of whitebark pine or its habitats in the project area.”

Page 29 of the Sage Hen Integrated Restoration Project: Botanical Resources Effects Analysis states: “Silvicultural models predict the actions in the Snowbank Inventoried Roadless Area would improve the presence and health of whitebark pine stands by doubling its composition by 2074 with a slight reduction in larger trees through time (see the Vegetation, Fire and Fuels Effects Analysis in support of the Sage Hen EA). The slight reduction in large trees would

be due to their eventual loss as they succumbed to white pine blister rust infections."

It goes on to state on page 29: "Broadcast and jackpot burning are proposed for the Snowbank Inventoried Roadless Area where known and modeled whitebark pine occurrences exist. For whitebark pine, spring or fall burning may kill seedlings susceptible to fire. For mature whitebark pine trees, the bark is relatively thin compared to other species such as ponderosa pine and susceptible to scorching from fire. Fires that approach the tree trunks may scorch the bark, diminishing the bark's protective properties from other stressors. Depending on the fireline intensity and residence time of lethal temperatures, the heat from the fire may also penetrate the bark, killing the underlying cambium layer. Harm to the bark and cambium may reduce individual treevigor and also increase susceptibility to infections such as white pine blister rust or infestations by the mountain pine beetle.Whitebark pine seed banks and fine roots may also be impacted should fire move through an area when fuels and soil moisture is conducive to longer residence time of lethal temperatures. Seeds are buried by Clark's nutcrackers generally within one inch of the soil surface and may be susceptible to longer residence time of lethal temperatures. Fine roots located near the soil surface serve as the primary water absorbing roots for trees and may be harmed or killed with longer residence times of lethal temperatures when soil moisture is low which would lead to an increase in the penetration depth of lethal temperatures. In general, the

proposed prescription would attempt to achieve a low severity surface fire in which shrubs, needle cast and upper duff layers would be consumed. In some instances, including dense stands in which commercial or non-commercial thinning is not feasible, higher severity fire effects may be preferred to achieve the desired condition for those forested stands.In the long term, broadcast burning in the vicinity of living whitebark pine stands may improve the habitat suitability for seed caching by Clark's nutcracker; seed germination; and whitebark pine seedling establishment. Clark's nutcrackers prefer to cache seeds in recently burned areas as fire removes understory plants and creates soils surfaces that are easier to penetrate for seed caching. In addition, in the long term, broadcast burning may reduce the vigor of other species that would compete with whitebark pine seedlings for sunlight, soil water, and nutrients."

Whitebark pine are now a proposed species and the project is in violation of the ESA. This is new information that was not available at the time comments were accepted by the BNF on this project.

On December 2, 2020, the U.S. Fish and Wildlife Service issued a rule proposing to list whitebark pine (Pinus albicaulis) under the Endangered Species Act. The Sage Hen Project area includes whitebark pine. The whitebark pine present in the project area represents a major source within the larger

geographic area. The Project proposes tree cutting and burning across thousands of acres where whitebark pine may be present. Regardless of whether individual activities are intended to impact whitebark pine, whitebark pine may be affected
by damage from equipment and equipment trails, cutting, soil compaction and disturbance, mortality from prescribed burning, scorching from jackpot burning, trampling of seedlings and saplings, and removal of necessary microclimates and nursery trees needed for sapling survival. Additionally, hundreds of acres of whitebark pine habitat manipulation are proposed for the Project, including intentionally cutting and burning Whitebark pine trees. No discussion on the success rate of natural
regeneration under these conditions is provided. No discussion of the success rate of planting seedlings
in clearcuts is provided.

The Forest Service admits that whitebark pine is known to be present in the area and that the Project "may impact individuals. . . ." The Forest Service further admits: "some adverse impacts are possible." The Forest Service further admits that "implementation of the project may cause incidental loss of whitebark pine seedlings and saplings . . . ."
Crucially, the Forest Service does not disclose or address the results of its only long-term study on the effects of tree cutting and burning on whitebark pine. This study, named "Restoring Whitebark Pine Ecosystems," included prescribed fire, thinning, selection cuttings, and fuel

enhancement cuttings on multiple different sites. The results were that "[a]s with all the other study results, there was very little whitebark pine regeneration observed on these plots." See U.S. Forest
Service, General Technical Report RMRS-GTR-232 (January 2010). More specifically: "the whitebark pine regeneration that was expected to result from this [seed] caching [in new openings] has not yet materialized. Nearly all sites contain very few or no whitebark pine seedlings." Thus, even ten years after cutting and burning, regeneration was "marginal." Moreover, as the Forest Service notes on its website: "All burn treatments resulted in high mortality in both whitebark pine and subalpine fir (over 40%)." Accordingly, the only proven method of restoration of whitebark pine is planting: "Manual planting of whitebark pine seedlings is required to adequately restore these sites."

Please find attached "Restoring Whitebark Pine Ecosystems in the Face of Climate Change
Robert E. Keane, Lisa M. Holsinger, Mary F. Mahalovich, and Diana F. Tomback" and "Restoring Whitebark Pine Forests of the Northern Rocky Mountains, USA Robert E. Keane and Russell a. Parsons."

Remedy:

1. The effects of the action on whitebark pine must be analyzed in the Project Biological Assessment and FWS must issue a letter of concurrence. The Forest Service must also survey the project area for Whitebark pine as part of an EIS.

The Forest Service's refusal to prepare a Biological Assessment for the Project for whitebark pine is arbitrary and capricious and an abuse of discretion.

Additionally, FWS must issue a Project-specific concurrence for any Forest Service no jeopardy determination.

The Forest Service concedes that whitebark pine is present in the Project area and may be affected by the Project. The law mandates that both listed and proposed species must be included in the Biological Assessment: "each Federal agency shall . . . request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action. If the Secretary advises, based on the best scientific and commercial data available, that such species may be present, such agency shall conduct a biological assessment. . .
." 16 U.S.C. §1536 (c). The Forest Service's violation of the plain statutory language violates the ESA.

Additionally, the plain language of the ESA regulations requires concurrence by the FWS Director for any jeopardy determination for a proposed species: “The Federal agency shall use the biological assessment in determining whether . . . a
conference is required . . . . If the biological assessment indicates that the action is not likely to jeopardize the continued existence of proposed species . . . and the Director concurs, then a conference is not required.” 50 C.F.R. § 402.12 (k).

For these reasons, the agencies must prepare a BA and letter of concurrence for whitebark pine prior to signing the Decision.

The Forest Service must withdraw the Project decision or formally suspend the Project in writing in a letter sent to all interested parties/member of the public, prepare a biological assessment for whitebark pine, and receive a letter of
concurrence from FWS prior to any further implementation of the project. These analysis documents must be based on the best available science, including disclosure and application of General Technical Report RMRS-GTR-232 (January 2010), which finds that cutting and burning trees results in whitebark pine mortality and marginal to
Restoring Whitebark Pine Forests of the Northern Rocky Mountains, USA
Robert E. Keane and Russell a. Parsons

The Forest Service must also consult with the FWS on the impact of the project on wolverines.

We wrote in our comments:

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

“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?”

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“16. The amount and distribution of old growth habitat needs to be identified in the scoping notice, including by old growth type as per Hamilton (1993).

Since the project is basically already planned, please provide a tally as well as map of all existing old growth in the project area, including by old growth type.”

The Forest Service responded on page 48 of the EA: “The proposed action would result in improved desired conditions for species composition, stand density, and increase the proportion of future old forest habitat.”

There is no evidence that the Forest Service is complying with the Forest Plan in violation of NEPA, NFMA and the APA.

The project is not complying with the old growth requirements of the Forest Plan.

Remedy: Withdraw the DDN and write an EIS that fully complies with the law or Choose the No Action Alternative.

We wrote in our comments:

“11. Please define in the NEPA analysis how the current crisis in the decline of forest birds by a billion birds since the 1970s is going to be addressed by this project; a Forest Plan amendment is clearly needed to address this crisis, as most agency vegetation management projects severely degrade habitat for birds; no further vegetation management projects should go forward until the Forest Plan addresses this crisis, and implements standards to protect this large suite of birds.

The Forest Plan is outdated in regards to the current identified crisis for forest birds, with a loss of a billion birds since the 1970s. The proposed project will adversely impact almost the entire project area, on 67,000 acres.

NEPA is required to be timely, and this new crisis needs to be addressed as per the purpose and need of the project. It is unlikely that a purpose and need can include the loss and degradation of 67,000 acres for forest birds, as well as other birds that use more open habitats. The scoping notice is outdated in this regard, and needs to be revised to include this new information, as this information directly relates to the management of public forest lands. As well, the Forest Plan is outdated, and needs to be amended

12. Please identify all the Idaho species of conservation concern that may occur in the project area, and define their distribution, habitat needs, and how these needs will be addressed by the project.

The scoping notice lacked any information on birds of conservation concern in Idaho. How can you manage 67,000 acres of public lands without looking at the needs of this vulnerable group of species? These need to be identified in the NEPA analysis, and surveys conducted to define where they occur in the project area. And as is required by the NEPA, the agency needs to define how habitat will be managed to ensure retention of these species. Please provide maps that show the current distribution of these various species in the project area."

The Forest Service responded in the wildlife report that there will be numerous take of birds.

This is a violation of the Migratory Bird Species Act (MBTA). Migratory birds are perhaps the most highly valued component of North America's biological diversity, with approximately 1,200 species representing nearly 15% of the world's known bird species. The seasonal movement of migratory birds is one of the most complex and compelling dramas in the natural world. Migratory birds embark twice each year on long−distance journeys between their breeding areas and their wintering grounds, which are sometimes separated by thousands of miles. State, federal, and international law all recognize the importance of protecting migratory bird species from harm.

The MBTA is one of America's oldest environmental protection laws, enacted in 1918 to implement international conventions promoting the conservation of global bird populations.

Pursuant to the MBTA, it is unlawful "at any time, by any means or in any manner to . . . take [or] kill . . . any migratory birds, [and] any part, nest, or eggs of any such bird." 16 U.S.C. § 703(a). This prohibition applies to federal agencies and their employees and contractors who may not intend to kill migratory birds but nonetheless take actions that result in the death of protected birds or their nests. Humane Soc'y of the United States v. Glickman, 217 F. 3d 882 (D.C. Cir. 2000) (holding that federal agencies are required to obtain a take permit from FWS prior to implementing any project that will result in take of migratory birds); see also Robertson v. Seattle Audubon

Soc'y, 503 U.S. 429, 437–38 (1992) (finding that federal agencies have obligations under the MBTA) and Center for Biological Diversity v. Pirie (191 F.Supp.2d 161 (D.D.C. 2002) (allowing injunctive relief against federal agencies for violations of the MBTA).

The prohibition on "take" of migratory birds includes destruction of nests during the breeding season. Specifically, "nest destruction that results in the unpermitted take of migratory birds or their eggs, is illegal and fully prosecutable under the MBTA." U.S. Fish and Wildlife Service,
Migratory Bird Permit Memorandum, from Director Steve Williams dated April 15, 2003.

In a 2008 Memorandum of Understanding Between the U.S. Department of Agriculture Forest Service and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds ("MOU"), the Forest Service identified specific actions that, if implemented, would contribute to the conservation of migratory birds and their habitats throughout the national forest system.

The MOU requires the Forest Service to alter the season of activities to minimize disturbances during the breeding season, to coordinate with the appropriate FWS Ecological Services office when planning projects that could affect migratory bird populations, and to follow all migratory bird permitting requirements. Importantly, the MOU "does not remove the Parties' legal requirements under the

MBTA...or other statutes and does not authorize the take of migratory birds," (emphasis added). See MOU at 1.
Take of migratory birds, and their nests and eggs, are prohibited under the MBTA except under the terms of a valid permit issued by the U.S. Fish & Wildlife Service. See 50 C.F.R. § 21.11. This permitting program regulates the number and species of birds that can be taken, providing a
means to balance use and conservation while monitoring activities to determine how they affect migratory birds.

Under the MBTA, "any person, association, partnership, or corporation" who violates the MBTA or regulations thereunder is subject to criminal and civil penalties. 16 U.S.C. §707. Violations of the MBTA are prosecuted as a misdemeanor, and upon conviction thereof, are subject to fines of up to $15,000 or imprisonment of up to six months, or both. Id.

Remedy: The NEPA requires federal agencies to prepare an Environmental Impact Statement ("EIS") before approving actions that may affect the environment. Please write an EIS that fully complies with the law.

NOXIOUS WEEDS

We wrote in our comments on March 23, 2020, "The Boise Forest has no current adequate toxic herbicide analysis, as the EIS that was finalized not long ago was based on old, out-dated risk assessments, etc."

We wrote in our comments on March 13, 2020. “Will this Project exacerbate existing noxious weed infestations and start new infestations?”

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

Will the Forest Service be considering binding legal standards for noxious weeds in its revision of the Boise 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 biodiversity 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?

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

The Forest Service responded on page 45 of the EA. “The proposed action includes design features to minimize the potential for the introduction and spread of noxious weeds. While the risk of exposure to noxious and non-native invasive species is high given existing conditions in the project area and the temporal and spatial scale of proposed ground disturbing activities, project design features would reduce the risks of noxious and non-native invasive species to manageable levels. Successful implementation of project design features would ensure project activities implement the intent of forest plan direction for the management of noxious and non-native invasive species and comply with relevant laws, regulations and policies. The Emmett Ranger District would continue to carry out its noxious weed and non-native plant treatment program as described in the Boise National Forest Weed Management Strategy and authorized under the 2019 Record of Decision for the Boise National Forest Invasive Species Project. In the Final Environmental Impact Statement for the 2019 Sawtooth and Boise National Forests Invasive Species Project, t he Boise National Forest addressed potential health risks of the authorized pesticides and the mitigations the Forest Service employs to reduce risks to employees and visitors.”

Despite the legacy of heavy-handed management and other anthropogenic activities—actions known to cause the spread of noxious weeds and other invasive plants—the EA fails to disclose the amount of noxious weed infestation in the project area in violation of NEPA, NFMA and the APA. This is consistent with the its overall failure to analyze cumulative effects of noxious weeds and the factors contributing to their spread in the project area.

Unfortunately, there are no Standards or Forest Plan monitoring items related to noxious weeds. To this day, the behavior of the BNF still seems to be constant denial. The BNF seems to believe that it can disturb all the land it wants and still deal with the consequential noxious weed invasion with later control actions. The EA fails to cite any science or BNF monitoring data that demonstrates the FS can significantly reduce noxious weed occurrence.

The FS is unable to prevent, contain, or control noxious weeds without the use of herbicides as routine practice. The problem only gets worse with each large-scale soil disturbance, such as what is proposed for the Sage Hen project.

The EA does not disclose the degree to which the productivity of the land been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades. The BNF's noxious weed treatment program is mitigation for management activities which exacerbate the spread of noxious weeds. The EA fails to disclose the effectiveness of this mitigation.

Again, the agency had no response showing it can competently get a handle on noxious weed infestations its management actions have caused.

Noxious weeds are the proverbial Pandora's Box loosed on the forest ecosystem—no amount of herbicide use reverses their spread for long. The financial costs of noxious weeds are another part of this elephant in the room. The agency does not account for the economic impacts of increased weed treatments due to projects such as this one, nor of the loss of ecosystem services attributed to noxious weeds being cultivated by project activities.

The impacts of noxious weeds are exacerbated by every action that disturbs soil or otherwise upsets the balance of native vegetation. Weed spread from management activities such as logging and burning and use of mechanized vehicles or equipment are a constant symptom of resource extraction management.

The impact of this project proposal on weeds is likely hugely significant, which means an environmental impact statement is required.

Prescribed burning is well documented to increase weeds and invasive annual grasses. The scoping notice did not actually mention what types of nonnative plants occur in this landscape. Some inferences were made that they would be controlled, which is highly unlikely. If weeds are present now, the control efforts have not worked. So why would these work when there will be even more weed infestations to control? This NEPA process requires a thorough inventory of all existing weed infestations in the project area, as well as a discussion on how effective control measures will be, especially for cheatgrass.

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 conversion 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 removing native vegetative cover, invasive plants like knapweed may increase sediment yield and surface runoff in an ecosystem. As well knapweed may alter organic matter distribution 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, mining, logging, prescribed burns, and road construction and use create a risk of weed infestations. The introduction of logging equipment and prescribed burning into the Forest creates and exacerbates noxious weed infestations. Prescribed burning can also facilitate the establishment of noxious weed infestations because of soil disturbance.

NFMA and NEPA require that the Forest Service 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 Idaho 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 Idaho and are rapidly expanding in established areas.

They can invade undisturbed areas where native plant communities are intact. These species can persist in shaded conditions and often grow underneath 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?

The cumulative, direct and indirect effects of the proposed project on weed introduction, spread and persistence have not been examined. This must include how weed infestations have been and will be influenced by the project.
Noxious weeds are not eradicated with single herbicide treatments. 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, repetitive schedules to be effective.

There is no commitment to a long-term, consistent strategy of application is being proposed for each weed infested area within the proposed action area. There is no mention of long term monitoring of weed populations. When areas treated with herbicides are reseeded on national forest land, they are usually reseeded with exotic grasses, not native plant species. There is no mention of what native plant restoration activities will be implemented in areas disturbed by the actions proposed in this project. Will disturbed areas 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 uninfested 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.

A survey needs to be done to show which units within the project area currently have no noxious weed populations within their boundaries. What minimum standards are in the Boise National Forest Plan to address noxious weed infestations? There was no alternative in the EA 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 EA alternative that includes preventive measures violates NEPA because the Forest Service would failed to consider a reasonable alternative.

Birds 'falling out of the sky' in mass die-off in south-western US

https://www.theguardian.com/environment/2020/sep/16/birds-falling-out-of-the-sky-in-mass-die-off-in-south-western-us-aoe

Wildfires and climate crisis cited as possible causes for the deaths of thousands of migrating species heading south for the winter

Thousands of migrating birds have inexplicably died in south-western US in what ornithologists have described as a national tragedy that is likely to be related to the climate crisis.

Flycatchers, swallows and warblers are among the species "falling out of the sky" as part of a mass die-off across New Mexico, Colorado, Texas, Arizona and farther north into Nebraska, with growing concerns there could be

hundreds of thousands dead already, said Martha Desmond, a professor in the biology department at New Mexico State University (NMSU). Many carcasses have little remaining fat reserves or muscle mass, with some appearing to have nose-dived into the ground mid-flight.

"I collected over a dozen in just a two-mile stretch in front of my house," said Desmond. "To see this and to be picking up these carcasses and realising how widespread this is, is personally devastating. To see this many individuals and species dying is a national tragedy."

Long-distance migrants flying south from tundra landscapes in Alaska and Canada pass over America's south-west to reach winter grounds in Central and South America. During this migration it is crucial they land every few days to refuel before continuing their journey.

Historic wildfires across the western states of the US could mean they had to re-route their migration away from resource-rich coastal areas and move inland over the Chihuahuan desert, where food and water are scarce, essentially meaning they starved to death. "They're literally just feathers and bones," Allison Salas, a graduate student at NMSU who has been collecting carcasses, wrote in a Twitter thread about the die-off. "Almost as if they have been flying until they just couldn't fly any more."

The south-western states of the US have experienced extremely dry conditions – believed to be related to the climate crisis – meaning there could be fewer insects, the main food source for migrating birds. A cold snap locally between 9 and 10 September could have also worsened conditions for the birds.

Any of these weather events may have triggered birds to start their migration early, having not built up sufficient fat reserves. Another theory is that the smoke from the wildfires may have damaged their lungs. "It could be a combination of things. It could be something that's still completely unknown to us," said Salas.

"The fact that we're finding hundreds of these birds dying, just kind of falling out of the sky is extremely alarming … The volume of carcasses that we have found has literally given me chills."

The first deaths were reported on 20 August on White Sands Missile Range in New Mexico. Initially, incidents were thought to be unrelated, but thanks to online forums, ornithologists noticed that they were happening all across the region. Resident bird species such as curve-billed thrashers, great-tailed grackles and white-winged doves do not appear to have been affected.

One of the hundreds of dead birds reported throughout New Mexico over the past two weeks. Photograph: Allison Salas/New Mexico State University

Reports suggest some birds have been displaying unusual behaviour before dying – becoming lethargic, approachable and congregating in groups. Species that normally rest in trees and shrubs have been seen hopping around on the ground looking for insects, said Desmond.

Large avian mortalities during migration are rare and few have been as large as this one. Records – which go back to the 1800s – show these events are always associated with extreme weather events such as a drop in temperature, snowstorm or hailstorm. The largest event on record in the region was a snowstorm in Minnesota and Iowa in March 1904 that killed 1.5 million birds.

The climate crisis is also changing the tundra landscape where many of these birds breed, while the destruction of rainforests in Central and South America is damaging their winter habitats. Since 1970, three billion birds have been lost in the US and Canada. Mass die-offs such as this can have an effect on populations of both common and sensitive species. Salas said: "We're kind of coming at them from all sides … if we don't do anything to protect their habitat we're going to lose large numbers of the populations of several species.

Carcasses are being sent to the US Fish and Wildlife Service forensics laboratory in Oregon and National Wildlife Health Centre in Wisconsin for testing, which is

expected to take at least two weeks. Scientists are urging people in the area to log any sightings of dead birds on the citizen science website inaturalist.

Tristanna Bickford, the communications director at New Mexico department of Game and Fish, said it was a possibility that the climate crisis had affected the migration. "Until we get the actual reports back from the National Wildlife Health Centre, we can't say what is happening or is not happening," she added.

Remedy: Select the No-Action alternative. Alternately, prepare an EIS that corrects the errors noted, including correcting the noted errors of analysis (including cumulative effects) and failure to use best available science.

We wrote in our March 13, 2020 comments:

"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 log-ging?

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 deforestation," and states that "protecting forest from logging or clearing offer immediate benefits via prevented emis-

sions." 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- vi-sioned in Krankina and Harmon (2006).”

The Forest Service responded on page 46 and 47 of the EA.

“The project would affect a relatively small amount of forest land and carbon on the Boise National Forest and might temporarily contribute an extremely small quantity of greenhouse gas emissions relative to national and global emissions. The proposed action would not convert forest land to other non-forest uses, thus allowing any carbon initially emitted from the proposed action to have a temporary influence on atmospheric greenhouse gas concentrations, because carbon would be removed from the atmosphere over time as the forest regrows. Furthermore, the project would transfer carbon in the harvested wood to the wood product sector, where it may be stored for up to several decades and substitute for more emission intensive materials or fuels. A complete and quantitative assessment of forest carbon stocks and the factors that influence carbon trends (management activities, disturbances and environmental factors) for the Boise National Forest is available in the project record (McKinley et al.2020). This carbon assessment contains

additional supporting information and references supporting this analysis. The proposed action is consistent with internationally recognized climate change adaptation and mitigation practices."

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 in our first objection.)

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 Helena Lewis and Clark 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 in our first objection). 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. Yet the EA fails to even provide a minimal quantitative analysis of project- or agency-caused CO_2 emissions or consider the best available science on the topic. This is immensely unethical and immoral. The lack of detailed scientific discussions in the EA concerning climate change is far more troubling than the document's failures on other topics, because the consequences of

unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all human societies. This is an issue as serious a nuclear annihilation (although at least with the latter we're not already pressing the button).

The EA provided a pittance of information on climate change effects on project area vegetation. The EA 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. For the Sage Hen project, this did not happen, in violation of NEPA.

The EA fails to consider that the effects of climate change on the project area, including that the "desired" vegetation conditions will likely not be achievable or sustainable. The EA fails to provide any credible analysis as to how realistic and achievable its desired 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. Nor does the EA acknowledge pertinent and highly relevant best available science on climate change. This project is in violation of NEPA.

The EA does not analyze or disclose the body of science that implicates logging activities as a contributor to reduced carbon stocks in forests and increases in greenhouse gas emissions. The EA fails to provide estimates of the total

amount of carbon dioxide (CO_2) or other greenhouse gas emissions caused by FS management actions and policies —forest-wide, regionally, or nationally. Agency policymakers seem comfortable maintaining a position that they need not take any leadership on this issue, and obfuscate via this EA to justify their failures.

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO_2. Unsurprisingly the EA doesn't state that simple fact.

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

The EA also ignores 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. The FS is 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.

Remedy: Choose the No Action Alternative. Revise the Forest Plan to take a hard look at the science of climate change. Alternatively, draft and new EIS for this project if the FS still wants to pursue it, which includes an analysis that examines climate change in the context of project activities and Desired Conditions.

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 Helena Lewis and Clark 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 to our first objection.)

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 to our first objection.)

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.

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

opinion, public participation and other factors that all, well almost all, view from a historical perspective. Assumptions that drove forest planning guidance decades ago, when climate risk was not known as it is today, are obsolete today.

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

A proper reexamination of the assumptions relating to resilience and sustainability contained in the Forest Plan is necessary. Scientific research supporting our comments focus on important data and analysis. A full discussion and disclosure of the following is required: 1) trends in wildfires, insect activity and tree mortality, 2) past regeneration success/failure in the 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 Elk Smith 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.

Fire plan.

We wrote in our March 13, 2020 comments:

“Have you done NEPA on the Community Fire Plan that the project relies on?”

The Forest Service did not respond to our comment in violation of NEPA and the APA.

Remedy: Consult with the U.S. Fish and Wildlife Service on the Fire Plan and follow NEPA in regards to the Fire Plan.

We wrote in our comments:

“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?”

The Forest Service responded in the Draft Decision Notice:

"Decision Rationale The Sage Hen Integrated Restoration Project (project) is needed for the following reasons:•To i m p r o v e vegetation conditions for the purpose of increasing forest resiliency to uncharacteristic disturbances •To restore watershed function for the purpose of improving aquatic resources, including bull trout habitat connectivity and diversity •To improve and manage recreation opportunities and use•To support local and regional economiesThe project was developed using best available science, corporate data, local knowledge of on-the-ground conditions, and internal and external feedback. The proposed action was modified based on consideration of comments received during the public scoping and comment period, discussions with interested public, elected officials, the Boise Forest Coalition, other interest groups, and the project interdisciplinary team."

The project does not follow the best available science and is in violation of NEPA, NFMA, the ESA and the ESA.

Please see the article below.

The Mythology of Fire Suppression

by George Wuerthner

https://www.counterpunch.org/2020/12/28/the-mythology-of-fire-suppression/

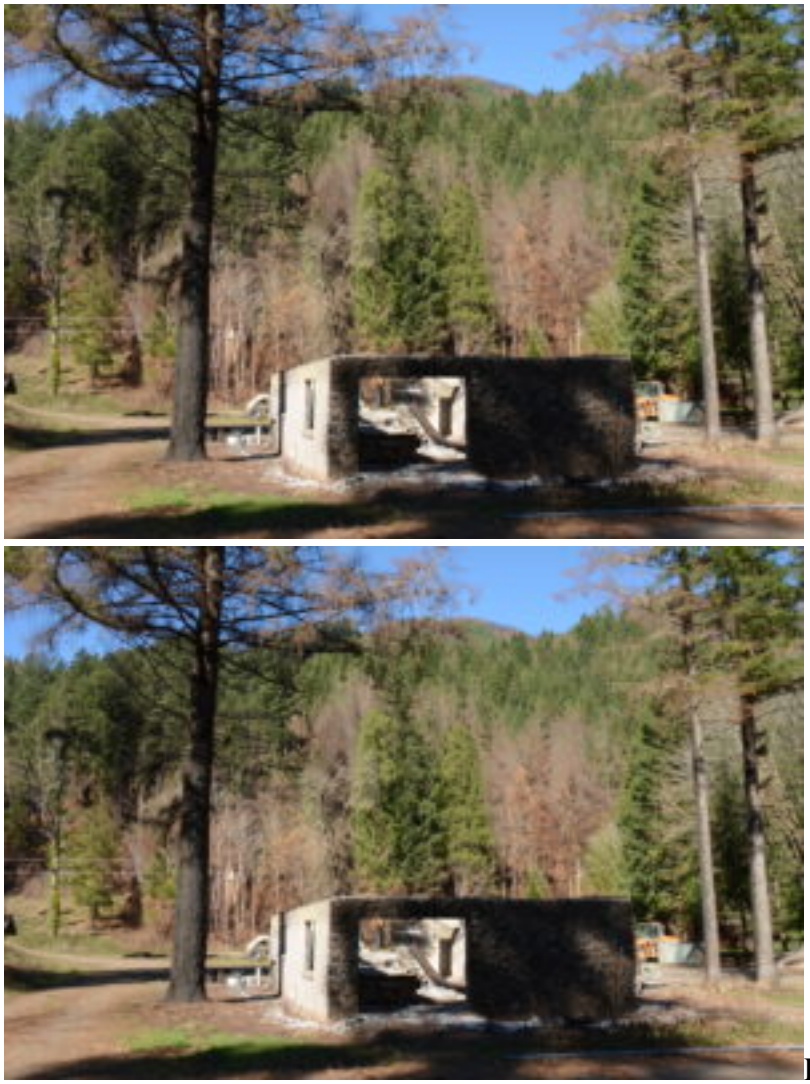
The recent piece published in the December 22 Guardian titled: *Heat, wind, and a cruel twist of Nature: inside Oregon's nightmarish wildfire season* was, on the whole, a very good overview of events. The article's general thrust was how climate/weather conspired to create the perfect conditions for large-scale wildfire in Oregon's Cascade Range.

Despite making an excellent case for the influence of climate and weather on fire spread, the reporter several times referenced the myth that fire suppression was partially responsible for these large blazes.

Ecologically speaking, fire suppression and the consequence fuel build-up have almost nothing to do with the large blazes occurring around the West. Most forest types in Oregon and the rest of the West have long fire-free intervals of centuries between major fires, during which they do not burn for a host of reasons related to climate and weather.

For instance, the old-growth Douglas fir that burned on the west slope of the Cascades mentioned in the article has natural fire intervals of 300-600 years. In other words, the usual situation is for these forests to be fire-free for centuries. During these periods, the forest is growing and dying and building up biomass (or foresters call fuel, and I call wildlife habitat).

Fire suppression does not influence plant communities with naturally long fire-free intervals. Even if fire suppression were effective, which is questionable in many instances since most fires are suppressed or controlled when the weather conditions change. The vast majority of fires are small and have little consequence on fuel accumulation.


Ruins of home charred by the Holiday Farm Fire along the McKenzie River where the fire interval is 300-600 years in the Douglas fir forests of the Western Cascades, Oregon. Photo George Wuerthner. These forests burn because the climate/weather conspires to create the right conditions for a burn, not because there is fuel.

We have evidence of this from several on the ground experiments. For example, in the years between 1972 and 1987, Yellowstone NP allowed all backcountry fires to burn without suppression. The lodgepole pine forests that dominate Yellowstone tend to burn on 300-400 year intervals. There are 235 fires during those years, and 222 burned five acres or less. Not because they were "suppressed' but because the climate/weather conditions were not conducive for fire spread.

Only one of the 235 blazes was larger than a thousand acres. All went out without suppression. Then in 1988, you had 800,000 acres burn in the park (36%). Was there suddenly more fuel in 1988? Why didn't' tens of thousands of acres burn in 1987 or 1986 or whatever date you want to pick? There was obviously plenty of fuel.


Snags from the 1988 Yellowstone blazes. The natural fire interval over much of Yellowstone NP is 200-400 years between blazes. Photo George Wuerthner.

The reason there were no large blazes in those years was due to the climate/weather which was not conducive to fire spread. But 1988 was the driest year on record since records were started in 1872. And you had some days with 50 mph winds. And with a number of ignitions instead of fire quietly extinguishing as occurred in the previous years, you got the massive Yellowstone blazes.

It's the same thing for most of the forest types around the West. They don't burn because of fire suppression, but Nature suppresses fires through the climate and weather. And when they burn, it is because Nature has changed the weather conditions to make it easier to burn and spread, as occurred this past September in Oregon. As noted in the article, the forests were parched, and this, combined with powerful dry winds, blew embers miles ahead of the fire front, starting new blazes.

When you have the right conditions of low humidity, high temperatures, drought, and most importantly, high winds, fires can overwhelm all "fuel reductions."

Not mentioned in the article was the fact that many acres charred were commercial timberlands regularly logged, thus reducing “fuel.” These lands burned at higher severity (greater mortality of trees) than non-managed landscapes.

Clearcuts in the western Cascades. The recent fires burned more severely in previously thinned or logged lands. Photo George Wuerthner.

The only exception to the above generalization is the ponderosa pine forests and a few other similar “dry” woods in the West like Jeffrey pine in CA. But those forests are a small part of the West’s total forested area and even the total acreage charred annually by wildfire.

For instance, most of the acreage burned in California in 2020 was chaparral scrub, grassland, and other non-forested plant communities.

However, the article was correct in noting that climate change is creating the conditions that foster massive burns. The way to alter these fires is to get serious about climate

change. In the meantime, we would be better served by fireproofing communities than by trying to fireproof the forest through logging or prescribed burning.

George Wuerthner has published 36 books including Wildfire: A Century of Failed Forest Policy.

Remedy: Choose the No Action alternative or withdraw the decision and write a new EIS that focuses on fireproofing communities rather than trying to fireproof forests.