September 28, 2023

Rob Davies, District Ranger
Hungry Horse Ranger District

Scott Snelson, District Ranger
Spotted Bear Ranger District

P.O. Box 190340
Hungry Horse, MT 59919

RE; Dry Riverside Project

Sent via email to: comments-northern-flathead-hungry-horse-glacier-view@usda.gov

Dear Ranger Davies and Ranger Snelson,

Thank you for the opportunity to comment on the proposed Dry Riverside project. Please accept these comments from me on behalf of the Alliance for the Wild Rockies, Yellowstone to Uin-

tas Connection, Center for Biological Diversity, Council on Wildlife and Fish, and Native Ecosystems Council.

The Alliance for the Wild Rockies, Council on Wildlife and Fish, Yellowstone to Uintas Connection, Yellowstone to Uintas Connection, and Native Ecosystems Council (collectively "Alliance") submit the following comments to guide the development of the environmental analysis for the proposal. We still believe that the Forest Service must complete a full environmental impact statement (EIS) for this Project because the scope of the Project will likely have a significant individual and cumulative impact on the environment. Alliance has reviewed the statutory and regulatory requirements governing National Forest Management projects, as well as the relevant case law, and compiled a check-list of issues that must be included in the EIS for the Project in order for the Forest Service's analysis to comply with the law. A Categorical Exclusion does not comply with the law.

Following the list of necessary elements, Alliance has also included a general narrative discussion on possible impacts of the Project, with accompanying citations to the relevant scientific literature. These references should be disclosed and discussed in the EIS or in the EA since you refused to write an EIS for the Project.

Please include a no commercial logging alternative.

NECESSARY ELEMENTS FOR PROJECT EIS:

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

B. Disclose the acreages of past, current, and reasonably foreseeable logging, grazing, and road-building activities within the Project area;

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

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

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

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

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

H. Disclose the current, during-project, and post-project road densities in the Project area; and disclose the number of road closure violations in the Ranger District during the last 5 years.

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

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

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

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

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

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

O. Disclose the amount of detrimental soil disturbance that currently exists in each proposed unit from previous logging and grazing activities;

P. Disclose the expected amount of detrimental soil disturbance in each unit after ground disturbance and prior to any proposed mitigation/remediation;

Q. Disclose the expected amount of detrimental soil disturbance in each unit after proposed mitigation/remediation;

R. Disclose the analytical data that supports proposed soil mitigation/remediation measures;

S. Disclose the timeline for implementation;

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

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

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

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

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

Y. Disclose the amount of mature and old growth forest that will remain after implementation;

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

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

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

CC. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security currently available in the area;

DD. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security during Project implementation;

EE. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security after implementation;

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

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

HH. 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 activities proposed for this Project; II.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;

JJ. Disclose when and how the Flathead National Forest made the decision to suppress natural wildfire in the Project area and replace natural fire with logging and prescribed burning;

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

LL. Disclose how Project complies with the Roadless Rulesince approximately 31 percent (17,215 acres) of the project area is located within an inventoried roadless area;

MM. Disclose the impact of climate change on the efficacy of the proposed treatments;

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

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

PP. 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;

SOIL PRODUCTIVITY The Flathead National Forest (FNF) adopted the Region 1 Soil Quality Standards, FSM 2500-99-1 (SQS), to assure compliance with the Forest Plan and NFMA. The SQS limit the areal extent of detrimental soil disturbance within logging units to no more than 15%. Soil Quality Standards "provide benchmark values that indicate when changes in soil properties and soil conditions would result in significant change or impairment of soil quality based on available research and Regional experience" (Forest Service Manual 2500, Region 1 Supplement 2500-99-1, Chapter 2550 – Soil Management, Section 2554.1).

The intent of the Regional Soil Quality Standards is that the FS must, in each case, consider the cumulative effects of both past and proposed soil disturbances to assure the desired soil conditions are met. This includes impacts from activities that include

logging, firewood gathering, livestock grazing, and motorized recreation impacts.

Please disclose percent detrimental disturbance estimates provided by watershed. What is the relevance of the areal extent of management-induced soil damage over such a geographic area? Alexander and Poff (1985) reviewed literature and found that the amount of soil damage varies even with the same logging system, depending on many factors. For example, as much as 10% to 40% of a logged area can be disturbed by skyline logging. They state: There are many more data on ground disturbance in logging, but these are enough to indicate the wide diversity of results obtained with different equipment operators, and logging techniques in timber stands of different composition in different types of terrain with different soils. Added to all these variables are different methods of investigating and reporting disturbance. The Sheep Creek Salvage FEIS (USDA Forest Service, 2005a) states at p. 173: Noxious weed presence may lead to physical and biological changes in soil. Organic matter distribution and

nutrient flux may change dramatically with noxious weed invasion. Spotted knapweed (Centaurea biebersteinii D.C.) impacts phosphorus levels at sites (LeJeune and Seastedt, 2001) and can hinder growth of other species with allelopathic mechanism. Specific to spotted knapweed, these traits can ultimately limit native species' ability to compete and can have direct impacts on species diversity (Tyser and Key 1988, Ridenour and Callaway 2001). Please disclose how the productivity of the land and soils been affected in the project area and forest wide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades.

From Grier et al., (1989): The potential productivity of a site can be raised or lowered by management activities causing a permanent or long-term increase or decrease in the availability of nutrients essential for plant growth. (P. 27.) ...Any time organic matter is removed from a site, a net loss of nutrients from that site also occurs. In timber harvesting or thinning, nutrient losses

tend to be proportional to the volume removed. (P. 27.) ...Slash burning is a common site preparation method that can affect soil chemical properties tremendously. A great deal of controversy is often associated with using fire because of the wide variety of effects, some of which are definitely detrimental to site quality and some of which are beneficial. (P. 30.) The FNF has never attempted to put in place a scientifically sound definition of "soil productivity" that

FAILURE TO REVIEW AND PROTECT CULTURAL AND HISTORICAL RESOURCES

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

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

Crucial to the preservation of the historical and cultural foundations of the nation, Section 106 of the National Historic Preser-

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

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

Section 110 of the NHPA

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

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

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

Please explain why the area qualifies as Wildland Urban Interface (WUI).

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

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

Will the Forest Service be considering amending the Flathead Forest Plan to include binding legal standards for noxious weeds?

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

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

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

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

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

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

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

How will the decreased elk security and thermal cover affect wolverines? Please formally consult with the US FWS on the impact of this project on wolverines. Wolverines need secure habitat in big game winter range.

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

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

What is your definition of healthier?

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

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

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

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

Can the forest survive without beetles?

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

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

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

The EA states on page 101:

The proposed action will not convert forestland to other non-forest uses. Any carbon initially emitted from the proposed action will have a temporary influence on atmospheric CO2 concentrations as carbon will be removed from the atmosphere over time as the forest regrows or recovers (project file exhibit r- 29).

The cited Forest Plan FEIS pages (288-311) provide a wholly inadequate and biased accounting of the forest carbon cycle. By claiming that "Carbon stored in harvested wood products contributes to the total forest carbon storage" is misleading because only a small percentage of the carbon removed as sawlogs actually becomes a wood product while the rest is wasted or burned as biomass. Trying to compensate for this waste by claiming

landfills are some "of the fastest-growing carbon pools" is equally ludicrous. It is also equally misleading to claim "when the effect of substituting wood for concrete and steel was also accounted for, then harvest scenarios resulted in less CO2 emission than the no-harvest scenario."

The Forest Service also failed to take a "hard look" at the carbon and climate impacts of removing hundreds of thousands of trees from the Forest. The Forest Service dismissed the impacts of logging these mature forests as "infinitesimal," ignoring years of science and agency guidance, and failed to address the climate pollution caused by cutting, hauling, and processing timber in violation of NEPA and the APA.

To evaluate the Project's impact on climate change, including on carbon storage and sequestration, the Forest Service relied on a "Carbon Report" that fails to adequately consider years of climate science and does not adequately analyze the Project's broader climate impacts.

The Forest Service's analysis of the Project's climate impacts is two sentences and is based on a document titled Flathead National Forest Plan Final EIS (volume 1, section 3.4, pp. 288-311), available at: https://www.fs.usda.gov/detailfull/flat-

head/landmanagement/planning/?

cid=stelprdb5422786&width=full.

The Forest Service's analysis of the Project's climate impacts tiers to the Forest Plan revision's Final EIS, which dismisses the impacts of management actions on the Flathead National Forest as "negligible," and compares them to total global and national emissions.

The Forest Service fails to quantify the Project's impacts on the loss of carbon storage and sequestration.

The agency's decision declining to address the project's impacts because they are allegedly "negligible" in comparison to the role the world's (or nation's) forests play in climate change is thus not only misleading, it masks the fact that every additional bit of climate pollution, or elimination of carbon sequestration ability, makes the problem worse, and that every bit of sequestration and storage is critical to the solution.

The Forest Service's approach does not adequately consider the Project's impacts on climate change.

NEPA requires federal agencies, including the Forest Service, to take a "hard look" at the direct, indirect, and cumulative impacts of proposed major federal actions. 42 U.S.C. § 4332(C)(i)-(ii); 40 C.F.R. §§ 1502.16 (1978), 1508.25(c) (1978). Among the impacts NEPA requires agencies to disclose are climate impacts.

The Dry Riverside EA fails to adequately disclose the climate change impacts of the Project. Specifically, the Forest Service fails to disclose the Project's impacts on carbon storage, sequestration and impacts to global climate change.

Further, the Forest Service fails to disclose the climate pollution impacts of project implementation – the use of fossil fuel engines to build roads, cut trees, and remove and transport cut logs to mills – compared to the no action alternative. The Forest Service thus failed to take a "hard look" at the Dry Riverside Project's climate pollution impacts, in violation of NEPA.

The failure of the Forest Service to take the required "hard look" at the climate pollution impacts of the South Plateau Project violates NEPA and is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. 5 U.S.C. § 706(2)(A).

The Federal District Court recently ruled against the Forest Service similar analysis on a case challenging the Kootenai National Forest Climate analysis for the Black Ram Project. Please find the order attached.

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

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

Is this Project consistent with "research recommendations (Krankina and Harmon 2006) for protecting carbon gains against

the potential impacts of future climate change? That study recommends "[i]ncreasing or maintain- ing the forest area by avoiding deforestation," and states that "protecting forest from logging or clearing offer immediate benefits via pre- vented emissions."

Please list each visual quality standard that applies to each unit and disclose whether each unit meets its respective visual quality standard.

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

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

Please disclose how often the Project area has been surveyed for whitebark pine, wolverines, Monarch butterflies, grizzly bears, pine martins, northern goshawks, and lynx.

Would the habitat be better for whitebark pine, Monarch butterflies, grizzly bears, wolverines, pine martins, northern goshawks, and lynx if roads were removed in the Project area?

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

Please formally consult with the U.S. Fish and Wildlife Service on the impact of the project on bull trout, bull trout critical habitat, whitebark pine, Monarch butterflies, grizzly bears, wolverines, pine martins, northern goshawks, lynx critical habitat, and lynx.

In Case 9:19-cv-0056-DWM the United States District Court for the District of Montana ruled on 6/24/21 that the Flathead Forest Plan was illegal because the Fish and Wildlife Service violated

the ESA by not considering the impacts of ineffective road closures in its 2017 BiOp. The court also ruled that the FWS violated the ESA by using a flawed incidental take statement for grizzly bears and the core density standards and secure core habitat surrogate violate the ESA.

Please wait to move write the EIS or EA on this project until the Flathead N.F. gets a new incidental take statement for grizzly bears.

Road Building and Closure Effectiveness

The EA relies on an outdated description of its road closure effectiveness monitoring (PF Exhibit Q-17, Kuennen 2019). It then relies on outdated effectiveness data (2019-2020) to conclude Forest-wide effectiveness of 92% (EA page 54), as does the revised Biological Opinion on the Flathead Forest Plan (Plan BiOp). It then provides absolutely no inspection data to support its conclusion that "there are no known persistent ineffective closures within the analysis area," nor any quantitative or other definition of "persistent." It then provides the same boilerplate language used in the Plan BiOp to discount, rather than account for, the effects of ineffective road closures on grizzly bears (EA at 54-56).

This boilerplate discounting of the effects on grizzly bears has been deemed inadequate and unlawful in a number of U.S. District Court rulings on the Kootenai NF and on the Helena-Lewis

and Clark NF. See, for example, the Kootenai NF Knotty Pine decision at
http://www.swanview.org/reports/Knotty-Pine-prelininary-in-junction-order-04242023.pdf
and the Helena-Lewis and Clark NF decision at:
http://www.swanview.org/reports/Helena_illegal_roads_order_-filed_8.03.23.pdf .

It does no good for the EA to add (page 54) that "Effects of past illegal use of roads on grizzly bears are part of the baseline conditions that have supported the expanding population and distribution of grizzly bears in the NDCE recovery zone" and deem the problem "inconsequential." The Flathead is adding more miles to its road System as "impassable" by not counting them in calculations of TMRD, even though they will continue to function as roads – thus increasing the number of roads and the number of ineffective road closures over what was included in the 2011 baseline. See the above court orders and our discussion that follows.

Please also see our 2023 "Road Hunt" road closure effectiveness report based on data collected while inspecting 303 FS road closures in the Swan Valley Geographic Area in 2022. (https://www.swanview.org/reports/Road_Hunt_Hammer_2023.pdf and submitted separately via email to Gary Blazejewski). We found only 53% of the closures showed no sign of motorized vehicles behind them and, after allowing for administrative and logging contractor use, found that effectiveness rose to only 68%. Our report discusses reasons for the disparity between the Flathead's previous finding of 92% effectiveness, shows that the Flathead's

2021 and 2022 data indicate a lower effectiveness, discusses flaws in the Flathead's road closure monitoring program, demonstrates how road closure violations can persist for many years before the closure device is repaired, reports on how dense vegetation contributes to road closure effectiveness, and discusses how the Flathead has not followed through with promises made to FWS during consultation on the revised Plan BiOp.

The EA and Project File documents located on the Project web site rely on old data and procedures and do not use the best available data and science available, as required by law. Some of that best available data would be the Flathead's own 2021 – 2023 road closure effectiveness data as well as our 2022 Swan Valley GA data and 2023 report. Moreover, the EA must include detailed road closure effectiveness data for each road in the analysis area, including when each closure has been inspected and whether it was found effective or not, and a clear accounting of how rebuilding previously abandoned or decommissioned roads (often overgrown with vegetation) and simply closing them as "impassable" lowers closure effectiveness and grizzly bear security.

The Project would rebuild 21.5 miles of previously abandoned or decommissioned roads and return them to the road System as "impassable to motorized vehicles" after blocking as little as the first 50' of the road – plus 1.2 miles of newly constructed road and 5.2 miles of "temporary" roads. Our Road Hunt report provides visual examples of where motor vehicles are detouring around closure devices for distances in excess of 50' (page 17). The EA needs to detail the current condition of each of the non-

system roads intended to be rebuilt, including its ability to resist motorized trespass, then detail to what degree rebuilding each road and simply rendering it “impassable” will increase its vulnerability to motorized trespass.

We find the revised BiOp to suffer the same legal inadequacies Judge Molloy found in the 2017 BiOp, especially in regards to the abandonment of Amendment 19’s requirements. The revised BiOp emphasizes several times in bold face that the Forest Plan and its implementing projects will and must maintain the 2011 “on the ground” grizzly bear habitat conditions. Yet it still allows the construction of new roads and the reconstruction of old roads without them showing up/being counted in TMRD.

Projects like Dry Riverside, for example, can build new roads and rebuild historic roads (even through Secure Core) and then simply close them as “impassable” roads - rather than have to reclaim and/or decommission them in order to omit them from TMRD. Rebuilding historic road templates in this Project and then simply rendering the road “impassable” to motor vehicles for the first 50’ does not provide the grizzly bear security that the previous status of historic road and “existing template” provided. Brand new road templates and old templates newly cleared of vegetation do not provide the previously existing impediments to human travel nor the resulting “on the ground” habitat conditions and security that previously existed for grizzly bear.

By not requiring that “impassable” roads be included in TMRD, the Project, Plan and Plan BiOp allow unlimited miles of roads

to be constructed without increasing TMRD above 2011 levels. While this sleight of hand may maintain 2011 numbers, it most certainly does not maintain 2011 "on the ground habitat conditions" and habitat security – premises and promises upon which the Plan and its BiOps are based.

This sleight of hand is perpetuated in the EA, where it notes on page 57:

> To meet FW-STD-IFS-02, upon completion of project activities, all temporary roads would be rehabilitated following timber harvest activities and would cease to function as roads. New roads (22.7 miles) would be added to the National Forest Service Road System (NFS) and treated to be impassable (as defined in the forest plan) to wheeled motorized vehicles.

Hidden in this statement is the presumption that, by not increasing public wheel-driven motorized access, the project will not increase public non-motorized access – which is simply not true. Indeed, the EA (page 59) warns that "Disturbance from motorized access, mechanical and human activity would disturb grizzly bears potentially altering travel and foraging patterns. Motorized use and human activity have the potential to cause grizzly bear mortality." (Emphasis added).

"Impassable" roads continue to function as roads for non-motorized public access that has documented negative impacts on grizzly bears. These roads also provide for additional impacts by

wheel-driven motorized trespass of the "impassable" barrier and the lawful use of motorized over-snow vehicles. Page 60 of the EA indeed finds "Overgrown roads cleared for project activities may indirectly allow for easier winter snowmobile access in the project area." But those impacts are not accounted for by showing the actual increase in total road density/TMRD – they are instead dismissed/omitted as though the new roads don't exist and have no impacts.

Culvert Replacements and Removals

All culvert removals must be considered essential mitigation under NEPA and must be fully funded before other Project actions can be taken, but they aren't (see 40 CFR 1505.3). Such crucial work, all of it in the Conservation Watershed Network in which "long-term conservation and preservation of bull trout and pure westslope cutthroat is prioritized" (EA at 102), must be implemented, not left to the vagaries of funding. Even the culvert work on haul routes is not guaranteed ("could be required", EA at 12).

The Plan BiOp requires that the Flathead "Remove all stream-aligned culverts when decommissioning roads in Conservation Watershed Network watersheds that have bull trout" (page II-78). "The project area is situated within the . . . Hungry Horse Reservoir Core Area for bull trout" (EA at 76). Not guaranteeing the removal of the 5 culverts on roads 5338, 1109 and 11410 as they are essentially decommissioned is a violation of the Plan BiOp's Terms and Conditions. Not guaranteeing the removal of

these culverts is especially egregious given that these roads "have numerous culverts filled in with sediment or are prone to failure due to their locations on the landscape (avalanche chutes). (Scoping/PA document, parenthesis in original).

These roads "have limited benefits to the Forest's travel system" yet the EA claims "switching these roads from closed year-long barrier to impassable is an appropriate course of action" (EA at 12). This conclusion is arbitrary and capricious. The EA makes no mention of the requisite Travel Analysis and Report necessary to weigh the benefits and risks of either decommissioning these roads or retaining them in the System as impassable. Especially in the Conservation Watershed Network where bull trout are to be a priority, it is a no-brainer that these roads of "limited value [which] traverse numerous avalanche chutes and drainages which increase their maintenance needs" (EA at 12), should be decommissioned so that removal of the stream-aligned culverts is guaranteed and no further maintenance is needed per the Plan BiOp requirements. Simply rendering these roads impassable is an end-run around the Plan BiOp. The EA includes no monitoring and maintenance plan for these roads should the stream-aligned culverts not be removed or for the remaining cross-drain culverts and other drainage features – all of which will no longer be accessible by motor vehicles or equipment.

The Flathead has a long history of leaving stream-aligned culverts in abandoned and decommissioned roads, even though their removal was required by former Forest Plan Amendment 19 and common sense. This is evidenced by EA Table 45 (page 78) which says there are 146 culverts and bridges in the affected

subwatersheds on “system and historic roads with culverts and bridges in place” (emphasis added). Table 3 (EA pages 8-9) makes clear that “Historical roads are roads that were NFS roads in the past but at some point, were removed from the NFS and decommissioned (as defined in the forest plan) . . . Existing template roads include roadbeds that are present on the ground but were never NFS roads.”

This begs the questions: Why were culverts and bridges left in decommissioned historic roads and how many of them were also left in “existing template roads? The EA is silent on this issue and provides no listing we can find of how many culverts and bridges remain in “existing template roads.” Instead, the EA continues the Flathead’s bad habits of leaving culverts in impassable roads while avoiding the decommissioning of roads so it need not remove culverts from them. The Flathead tried to correct its bad habits through Amendment 19 but reneged on it in its revised Forest Plan, demonstrating it cannot be rehabilitated in light of its desire to build and retain as much road access as possible while scuttling adequate protections to fish and wildlife.

Oddly, EA Tables 45 - 49, among others, include “Quintonkon Creek – Hungry Horse Reservoir” among the four HUC-12 subwatersheds affected by the Project. Why is this subwatershed, which is across the Reservoir from the Project area included? Table 48 then shows the Project will result in 4 additional stream crossings on the east side of the Reservoir, but will have 4 less crossing on the west side of the Reservoir, as though the Project will have no net impact. How does this Project result in

4 less stream crossings in the Quintonkon subwatershed outside the Project area, or is Quintonkon included only to give the appearance of no net increase in stream crossings?

Please see the 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.

Has the Flathead N.F. eliminated and Lynx Analysis Units (LAUs) without taking public comment? Is were any of these LAUs in the project area?

Weeds

Native plants are the foundation upon which the ecosystems of the Forest are built, providing forage and shelter for all native wildlife, bird and insect species, supporting the natural processes of the landscape, and providing the context within which the public find recreational and spiritual opportunities. All these uses or values of land are hindered or lost by con- version of na-

tive vegetation to invasive and noxious plants. The ecological threats posed by noxious weed infestations are so great that a former chief of the Forest Service called the invasion of noxious weeds “devastating” and a “biological disaster.” Despite implementation of Forest Service “best management practices” (BMPs), noxious weed infestation on the Forest is getting worse and noxious weeds will likely overtake native plant populations if introduced into areas that are not yet infested. The Forest Service has recognized that the effects of noxious weed invasions may be irreversible. Even if weeds are eliminated with herbicide treatment, they may be replaced by other weeds, not by native plant species.

Invasive plant species, also called noxious weeds, are one of the greatest modern threats to biodiversity on earth. Noxious weeds cause harm because they displace native plants, resulting in a loss of diversity and a change in the structure of a plant community. By re- moving native vegetative cover, invasive plants like

knapweed may increase sediment yield and surface runoff in an ecosystem. As well knapweed may alter organic matter dis- tribution and nutrient through a greater ability to uptake phosphorus over some native species in grasslands. Weed colonization can alter fire behavior by increasing flammability: for example, cheatgrass, a widespread noxious weed on the Forest, cures early and leads to more frequent burning. Weed colonization can also deplete soil nutrients and change the physical structure of soils.

The Forest Service's own management activities are largely responsible for noxious weed infestations; in particular, logging, pre- scribed burns, and road construction and use create a risk of weed infestations. The introduction of logging equipment into the Forest creates and exacerbates noxious weed infestations. The removal of trees through logging can also facilitate the establishment of noxious weed infestations be- cause of soil disturbance and the reduction of canopy closure In general, noxious

weeds occur in old clearcuts and forest openings, but are rare in mature and old growth forests. Roads are of- ten the first place new invader weeds are introduced. Vehicle traffic and soil disturbances from road construction and maintenance create ideal establishment conditions for weeds. Roads also provide obvious dispersal corridors. Roadsides throughout the project area are infested with noxious weeds. Once established along roadsides, invasive plants will likely spread into adjacent grass- lands and forest openings.

Prescribed burning activities within the analysis area would likely cumulatively con- tribute to increases to noxious weed distribution and populations. As a disturbance process, fire has the potential to greatly exacerbate infestations of certain noxious weed species, depending on burn severity and habitat type (Fire Effects Information System 2004). Soil disturbance, such as that resulting from low and moderate burn severities from prescribed fire and fire suppression related disturbances (dozer lines, drop

spots, etc.), provide optimum conditions for noxious weed invasion. Dry site vegetation types and road corridors are extremely vulnerable, especially where recent ground disturbance (timber management, road construction) has occurred. Units proposed for burning within project area may have closed forest service access roads (jammers) located within units. These units have the highest potential for noxious weed infestation and exacerbation through fire activities. Please provide an alternative that eliminates units that have noxious weeds present on roads within units from fire management proposals.

Please address the ecological, social and ascetic impact of current noxious weed infestations within the project area. Include an analysis of the impact of the actions proposed by this project on the long and short term spread of current and new noxious weed infestations. What treatment methods will be used to address growing noxious weed problems? What noxious weeds are currently and historically found within the project area? Please

include a map of current noxious weed infestations which in- cludes knapweed, Saint Johnswort, cheat grass, bull thistle, Canada thistle, hawkweed, hound's- tongue, oxeye daisy and all other Category 1, Category 2 and Category 3 weeds classified as noxious in the MONTANA COUNTY NOXIOUS

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

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

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.

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

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

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

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

because the Forest Ser- vice would fail to consider a reasonable alter- native.

Rare Plants

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

diversity because herbicides kill native plants as well as invasive plants.

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 eco- logical 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 sub- alpine 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 white- bark 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.

What surveys have been conducted to determine presence and abundance of whitebark pine re-generation? 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 re-sistant stock available? Would enough seedlings be planted to replace whitebark pine lost to fire activities? Have white pine blister rust surveys been accompli- shed? What is the severity of white pine blister rust in proposed action areas?

Montana is currently experiencing a mountain pine beetle epi-demic. Mountain pine beetle prefer large, older whitebark pine, which are the major cone producers. In some areas the few re-

maining 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 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 re-

generation maintaining the viability and function of whitebark pine would not be achieved through burning.

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

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 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?

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. As you know, whitebark pine will be listed as threaten under the Endangered Species Act as of January 17, 2023. 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 a “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.” We submitted this paper with our scoping comments.

Please formally consult with he FWS on the impact of this project on lynx, lynx critical habitat, bull trout, bull trout critical habitat, and grizzly bears.

Please disclose if the project is meeting:

(1) Forest Plan Standard 3 - Hiding Cover,

(2) Forest Plan Standard 3 - Thermal Cover,

(3) Forest Plan Standard 4a - Open Road

Density & Hiding Cover,

(4) Habitat Effectiveness,

(5) Hillis Elk Security at Elk Herd Unit level (i.e., including all lands), and

(6) Hillis-derived Elk Security at Elk Analysis Unit level (i.e., lands within National Forest boundary).

MT FWP has informed the Forest Service that total number of elk is not a correct measure of whether or not adequate secure big game habitat is available on Forest Service lands: "This is inappropriate because the correct measures of big game security are annual bull survival rates and the degree to which big game are retained on public land during the fall hunting season."

Please disclose or address the displacement of elk from public land to private land during hunting season due to inadequate security habitat on National Forests. FWP has informed the Forest Service that "[a]lthough elk populations have generally increased in hunting districts that include Helena National Forest land since adoption of the 1986 [Helena National Forest] Forest Plan, the number of elk that spend summer and fall on the Lincoln Ranger District (LRD) have not. . . .

FWP recommends that land managers provide enough secure habitat during fall to meet annual bull survival objectives while maintaining general bull harvest opportunity. . . . Neither public land populations nor bull ratios in the Flathead National Forest have increased despite the near elimination of antlerless harvest opportunity and the adoption of spike-bull harvest restrictions.

In contrast, the number of elk that spend the majority of the year on some nearby private lands has increased dramatically between 1986 and 2013.

Has MT FWP urged the Flathead National Forest to increase functional fall habitat security on the Hungry Horse and Spotted Bear Ranger Districts?

Please demonstrated compliance with the Montana Elk-Logging Study Recommendation for Road Management. The Road Management requirement states: “Where maintenance of elk habitat quality and security is an important consideration, open road densities should be held to a low level, and every open road should be carefully evaluated to determine the possible consequences for elk.” To not do so is a violation of NEPA,NFMA, and the APA.

Are you planning on issuing any amendments to the Forest Plan for this project. If so what?

Montana FWP has indicated that there is a serious problem with elk being displaced from insecure National Forest lands onto private land during hunting season. Repeatedly exempting logging and roading projects from the only quantitative limits on logging and roading on this National Forest exacerbates this elk displacement problem and (a) results in a failure to comply with Forest Plan objectives and goals to maintain elk habitat and-hunter opportunity, (b) results in a major change to standards and guidelines intended to maintain elk habitat and hunter opportunity, (c)significantly limits hunter opportunity on this Forest, and (d) affects a large portion of this National Forest that is reasonably available to the public for hunting.

For these reasons, the Forest Service’s practice of routinely exempting projects from Standards 3 and 4a amounts to a signifi-

cant change to the Forest Plan, which requires analysis under 36 C.F.R. §219.10 (f) and 36 C.F.R. §219.12.

Will the Dry Riverside project log aspen stands? If so, will the project also provide protection for aspen stands from livestock browsing.

The agency is violating the NEPA by promoting fuel reduction projects as protection of the public from fire, when this is actually a very unlikely event; the probability of a given fuel break to actually have a fire in it before the fuels reduction benefits are lost with conifer regeneration are extremely remote; forest drying and increased wind speeds in thinned forests may increase, not reduce, the risk of fire.

The agency is violating the NEPA by providing false reasons for logging to the public by claiming that insects and disease in forest stands are detrimental to the forest by reducing stand vigor (health) and increasing fire risk. There is no cur- rent science that demonstrates that insects and disease are bad for wildlife, including dwarf mistletoe, or that these increase the risk of fire once red needles have fallen.

The agency is violating the NEPA by claiming that logging is needed to create a diversity of stand structures and age classes;

this is just agency rhetoric to conceal the real purpose of logging to the public.

The agency is violating the NEPA by using vague, un-measure-able terms to rationalize the proposed logging to the public. How can the public measure “resiliency?” What are the specific criteria used to define resiliency, and what are the ratings for each proposed logging unit before and after treatment? How is the risk of fire as affected by the project being measured so that the public can understand whether or not this will be effective? How is forest health to be measured so that the public can see that this is a valid management strategy? What specifically con-stitutes a diversity of age classes, how is this to be measured, and how are proposed changes measured as per diversity? How are diversity measures related to wildlife (why is diversity need-ed for what species)? If the reasons for logging cannot be clearly

identified and measured for the public, the agency is not meeting the NEPA requirements for transparency.

The agency will violate the Forest Plan by logging riparian areas; almost all wildlife species will be harmed by this treatment.

The agency will violate the NFMA by failing to ensure that old growth forests are well-distributed across the landscape with a Forest Plan amendment; although not provided in the scoping document for public comment, the agency is amending the Forest Plan to allow logging of old growth rather than preserving it.

Please see the attached papers by Baker et al. 2023 and Della-Salla 2022 that dispute your purpose and need.

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 include an easily understandable accounting of all costs for the various types of treatments, including burning. For commercial logging, fuels reduction, and prescribed burning, we would like to know what the estimated cost is "per acre" for that particular treatment. We would also like to know the costs for construction of new temporary roads, reconstruction of existing roads, and road obliteration and/or decommissioning per mile of road.

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.

The Endangered Species Act requires the FS to insure that the GRLA project is not likely to result in the destruction or adverse modification of critical habitat. 16 U.S.C. §1536(a) (2). Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for lynx. 74 Fed. Reg. 8644. The Northern Rockies Lynx Management Direction (NRLMD) as applied in the project vio-

lates the ESA by failing to use the best available science to in- sure no adverse

modification of critical habitat. The NRLMD carves out exemp- tions from Veg Standards

S1, S2, S5, and S6. In particular, fuel treatment projects may oc- cur in the WUI even though they will not meet standards Veg S1, S2, S5, or S6, provided they do not occur on more than 6% of lynx habitat on each Nation- al Forest. Allowing the agency to destroy or adversely modify any lynx critical habitat has the po- tential to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% forest-wide without looking at the individual characteristics of each LAU to determine whether the project has the potential to appreciably reduce the conservation value. The ESA requires the use of the best available science at the site-specific level. It does not allow the agencies to make a gross determination that al- lowing lynx

critical habitat to be destroyed forest-wide while not appreciably reduce the conservation value.

The FS violated NEPA by applying the above-mentioned exception without analyzing the impacts to lynx in the individual LAUs. The Project violates the NFMA by failing to insure the viability of lynx. Ac- cording to the 1982 NFMA regulations, fish and wildlife must be managed to maintain vi- able populations of Canada lynx in the planning area. 36 C.F.R. 219.19. The FS has not shown that lynx will be well distributed in the planning area. The FS has not addressed how the project's adverse modification of denning and foraging habitat will impact distribution. This is important because the agency readily admits that the LAUs already contain a "relatively large percentage of unsuitable habitat."

The national forests subject to this new direction will provide habitat to maintain a viable

population of lynx in the northern Rockies by maintaining the current distribution of occupied lynx habitat, and maintaining or enhancing the quality of that habitat.

The FS cannot insure species viability here without addressing the impacts to the already low amount of suitable habitat. By cutting in denning and foraging habitat, the agency will not be "maintaining or enhancing the quality of the habitat."

This project is in Canada lynx habitat. In order to meet the requirements of the FS/USFWS Conservation Agreement, the FS agreed to insure that all project activities are consistent with the Lynx Conservation Assessment and Strategy (LCAS) and the requirements of protecting lynx critical habitat. The FS did not do so with its project analysis. This project will adversely affect lynx critical habitat in violation of the Endangered Species Act. The BA/BE needs to be rewritten to reflect this information to determine if this project will adversely modify proposed critical habitat for lynx and if so conference with USFWS.

The Flathead National Forest (FNF) is home to the Canada lynx, listed as a Threatened species under the Endangered Species Act (ESA). In December 1999, the Forest Service and Bureau of Land Management completed their "Biological Assessment Of The Effects Of National Forest Land And Resource Management Plans And Bureau Of Land Management Land Use Plans On Canada Lynx" (Programmatic Lynx BA). The Programmatic Lynx BA concluded that the cur- rent programmatic land management plans "may affect, and are likely to adversely affect, the subject population of Canada lynx."

The Lynx BA team recommended amending or revising Forest Plans to incorporate conservation measures that would reduce or eliminate the identified adverse effects on lynx. The Programmatic Lynx BA's determination means that Forest Plan implementation is a "taking" of lynx, and makes Section 7 formal consultation on the Flathead Forest Plan mandatory, before actions such as the proposed project are approved.

Continued implementation of the Forest Plan constitutes a "taking" of the lynx. Such taking can only be authorized with an incidental take statement, issued as part of a Biological Opinion (B.O.) during of Section 7 consultation. The Flathead National Forest 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 Programmatic Lynx BA's "likely to adversely affect" conclusion was based upon the following rationale. Plans within the Northern Rockies:

• Generally direct an aggressive fire suppression strategy within developmental land allocations. ...this strategy may be contributing to a risk of adversely affecting the lynx by limiting the availability of foraging habitat within these areas.

• Allow levels of human access via forest roads that may pre- sent a risk of incidental trapping or shooting of lynx or access by other competing carnivores. The risk of road-related adverse ef- fects is primarily a winter season issue.

• Are weak in providing guidance for new or existing recreation developments. There- fore, these activities may contribute to a risk of ad- verse effects to lynx.

• Allow both mechanized and non-mechanized recreation that may contribute to a risk of adverse effects to lynx. The potential effects occur by allowing compacted snow trails and plowed roads which may facilitate the movements of lynx competitors and predators.

• Provide weak direction for maintaining habitat connectivity within naturally or artificially fragmented landscapes. Plans within all geographic areas lack direction for coordinating con- struction of highways and other movement barriers with other

responsible agencies. These factors may be contributing to a risk of adverse effects to lynx.

• Are weak in providing direction for coordinating management activities with adjacent landowners and other agencies to assure consistent management of lynx habitat across the landscape. This may contribute to a risk of adverse effects to lynx.

• Fail to provide direction for monitoring of lynx, snowshoe hares, and their habitats. While failure to monitor does not directly result in adverse effects, it makes the detection and assessment of adverse effects from other management activities difficult or impossible to attain.

• Forest management has resulted in a reduction of the area in which natural ecological processes were historically allowed to operate, thereby increasing the area potentially affected by known risk factors to lynx. The Plans have continued this trend.

The Plans have also continued the process of fragmenting habi-tat and

reducing its quality and quantity. Consequently, plans may risk adversely affect- ing lynx by potentially contributing to a reduc-tion in the geographic range of the species.

• The BA team recommends amending or revising the Plans to incorporate conservation measures that would reduce or elimi-nate the identified adverse effects to lynx. The programmatic conservation measures listed in the Canada Lynx Con- servation Assessment and Strategy (LCAS) should be considered in this regard, once finalized. (Programmatic Lynx BA, at 4.)

The Programmatic Lynx BA notes that the LCAS identifies the following risk fac-tors to lynx in this geographic area:

- Timber harvest and pre-commercial thinning that reduce denning or foraging habitat or converts habitat to less de-

sirable tree species

- Fire exclusion that changes the vegetation mosaic maintained by natural disturbance processes

- Grazing by domestic livestock that reduces forage for lynx prey

How many road closure violations have been found in the Hungry Horse and Spotted Bear Ranger Districts in the last 5 years?

In Case 9:19-cv-0056-DWM the United States District Court for the District of Montana ruled on 6/24/21 that the Flathead Forest Plan was illegal because the Fish and Wildlife Service violated the ESA by not considering the impacts of ineffective road closures in its 2017 BiOp. The court also ruled that the FWS violated the ESA by using a flawed incidental take statement for grizzly bears and the core density standards and secure core habitat surrogate violate the ESA.

It is fair to assume that there are many more violations that regularly occur and are not witnessed and reported. It is also fair to assume that you have made no effort to request this available information from your own law enforcement officers, much less incorporate it into your analysis. Considering your own admissions that road density is the primary factor that degrades elk and grizzly habitat, this is a material and significant omission from your analysis– all of your ORD and HE calculations are wrong without this information.

The veracity of the FS's inventory of system and nonsystem ("undetermined" or "unauthorized") roads is at issue here also. This is partly because the FS basically turns a blind eye to the situation with insufficient commitment to monitoring, and also because violations are not always remedied in a timely manner.

The Dry Riverside project would violate the Forest Plan/Access standards, a violation of NFMA because of road closure violations.

Please disclose how many years the existing core ares have provided the habitat benefits assumed under the Forest Plan. As pointed out, some has been lost (due to "private infrastructure development") and we're not told of other likely and forseeable reductions.

Please take a hard look as road closure violations.

Additionally, your emphasis on elk populations across entire hunting districts is disingenuous and has little relevance to whether you are meeting your Forest Plan obligations to maintain sufficient elk habitat onNational

Forest lands. As you note, the Forest Plan estimated that 70% of elk were taken on National Forest lands in 1986. What percentage of elk are currently taken on National Forest lands?

Have you asked Montana FWP for this information? Any honest biologist would admit that high elk population numbers do not indicate that you are appropriately managing National Forest elk habitat; to the contrary, high elk numbers indicate that you are so poorly managing elk habitat on National Forest lands that elk are being displaced to private lands where hunting is limited or prohibited. Your own Forest Service guidance document, Christensen et al 1993 states: "Reducing habitat effectiveness should never be considered as a means of controlling elk populations."

What is the existing condition of linear motorized route density on National Forest System lands in the action area and what would it increase to during implementation.

Do your open road density calculations include the“non- system” i.e. illegal roads in the Project area?

Do your open road density calculations include all of the recurring illegal road use documented in your own law enforcement incident reports?

Has the FNF closed or obliterated all roads that were promised to be closed or obliterated in the your Travel Plans in the Hungry Horse and Spotted Bear Ranger Districts? Or, are you still waiting for funds to close or obliterate those roads? This distinction matters because you cannot honestly claim that you are meeting road density standards promised by the Travel Plan if you have not yet completed the road closures/obliterations promised by the Travel Plan. Furthermore, as noted above, you have a major problem with recurring, chronic violations of the road closures created by the Travel Plan, which means that your assumptions in the Travel Plan that all closures would be effective has proven false. For this reason, you cannot tier to the analysis in the Travel Plan because it is invalid. You must either complete new NEPA analysis for the Travel Plan on this issue or provide that new analysis in the NEPA analysis for this Project. Either way, you must update your open road density calculations to include all roads receiving illegal use.

Are the Blackfoot Travel Plan habitat effectiveness estimates accurate in light of all the illegal roads and road closure violations? Certainly, you are not taking a hard look at habitat effectiveness in this Project area if you are relying on the habitat effectiveness estimates from \ the Travel Plan at the HD scale.

Christensen et al (1993) states: "Any motorized vehicle use on roads will reduce habitat effectiveness. Recognize and deal with all forms of motorized vehicles and all uses, including administrative use." Please disclose this to the public and stop representing that roads closed to thepublic should not be included in habitat effectiveness calculations. The facts that (a) you are constructing or reconstructing over 40 miles of road for this project, (b) you have problems with recurring illegal use, and (c) youalready admit that you found another 25 miles of illegal roads in the project area that you have not committed to obliterating, means that your conclusion that this Project will have no effect on open road density or habitat effectiveness is implausible to the point of being disingenuous. You cannot exclude these roads simply because you say they are closed to the public. Every road receiving motorized use must be included in the HE calculation. You must consider all of this road use in order to take a hard look that is fully and fairly informed regarding habitat effective-

ness. In thevery least you must add in all “non-system” roads, i.e. illegal roads, as well as recurring illegal road use (violations) in your ORD calculations. Also, as a side note, your calculations in

Christensen et al 1993 finds: “Areas where habitat effectiveness is retained at lower than 50 percent must be recognized as making only minor contributions to elk management goals. If habitat effectiveness is notimportant, don't fake it. Just admit up front that elk are not a consideration.”

Will the project comply with Forest Plan Management Area C Goal states: “Maintain or enhance existing elk habitat by maximizing habitat effectiveness as a primary management objective. Emphasis will also be directed toward management of indigenous wildlife species. Commodity resource management will be practiced where it is compatible with these wildlife management objectives.” Also – MA C Standard: “Habitat effectiveness will be positively managed through road management and other necessary controls on resource activities.” Also – “Elk habitat effectiveness will be maintained.” Please demonstrate that the project will comply with all of these provisions for all of the above-stated reasons.

Do the action alternatives comply with PACFISH-INFISH?

Are you meeting the INFISH Riparian Management Objectives for temperature, pool frequency, and sediment?

With all of the bull trout spawning streams and designated as critical habitat in the project area we would expect robust road decommissioning and culvert removals, and no logging in riparian areas of streams. Instead it appears the Dry Riverside project will be a robust logging and roading project that will degrade, not improve aquatic ecosystems.

Please analyze a road decommission alternative with no new roads.

The best available science shows that roads are detrimental to aquatic habitat and logging in riparian areas is not restoration.

Fish evolved with fire, they did not evolve with roads and logging.

Although wildfires may create important changes in watershed processes often considered harmful for fish or fish habitats, the spatial and temporal nature of disturbance is important. Fire and the associated hydrologic effects can be characterized as "pulsed" disturbances (sensu Yount and Niemi 1990) as opposed to the more chronic or "press" effects linked to permanent road networks. Species such as bull trout and redband trout appear to have been well adapted to such pulsed disturbance. The population characteristics that provide for resilience in the face of such events, however, likely depend on large, well-connected, and spatially complex habitats that can

be lost through chronic effects of other management. Critical elements to resilience and persistence of many populations for these and similar species will be maintaining and restoring complex habitats across a network of streams and watersheds. Intensive land management could make that a difficult job. (Rieman and Clayton 1997)

If the restoration work does not get done. How much sediment will go into the streams in the project area post-project?

What are the redd counts in bull trout critical habitat in the project area? Please also provide the all the historical bull counts that you have in the project area?

The EA 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.

We wrote in our scoping comments:
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.

Page 66 of the EA shows the total amount of sediment currently going into the streams in the project area per year is 286 tons. Under Alternative 2 this will increase to 511 tons of sediment per year. Under Alternative 3 is will increase to 461.3 tons per year and under alternative 4 it will increase to 516 tons per year. The amount of sediment going into the streams will barely go down post project. Assuming your table is accurate, how many years it will take post-project to make up for all of the increase in sediment during the project? Will there be any bull trout left in the streams by then? How

many bull trout will be killed during the implementation of the project?

How will the Dry Riverside project make the waters clearer in the short term?

How will the Dry Riverside project make the waters colder in the short term?

How will the Dry Riverside project make the gravel beds of the streams int he project area cleaner in the short and long term?

How will the Dry Riverside project make the affect deep pools in streams in the project area in the short and long term?

How will the Dry Riverside project make the affect complex cover over the streams in the project area in the short and long term?

How will the Dry Riverside project make the affect the in-stream flows in the fall in the short and long term?

How will the Dry Riverside project make the affect large systems of interconnected waterways for bull trout migrations?

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? How long is the project scheduled to last?

Will this project adversely modify bull trout critical habitat in the short run?

How will the Dry Riverside project affect the temperature of the streams in the project area including bull trout critical habitat?

Will all of the proposed logging increase the temperature of the streams in the project area?

Will all of the proposed road building and road use by log truck, clearcutting, and other logging put more sediment into streams in the project area?

How will this affect bull trout and bull trout critical habitat?

When was the last time the project area was surveyed for bull trout?

What was the results of these surveys?

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 adequate 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.

Page 5 and 6 of the EA states:

Need for the Proposal

The purpose and need of the Dry Riverside Project are derived from the differences between the existing landscape condition and the desired condition described in the forest plan. Following field review of the project area and interdisciplinary discussions, the following purposes and needs were identified:

- ***Improve the diversity and resilience of terrestrial ecosystems and vegetation.***

- ***Remove, reduce, or rearrange fuels to promote a more fire resilient forest and limit impacts to natural resources, should a wildfire occur.***

- ***Provide a mix of forest products to contribute to economic sustainability, providing jobs and income to local economies.***
  Improve the diversity and resilience of terrestrial ecosystems and vegetation.
  Fire and past harvest have created the vegetative conditions found in the project area today. In the early 1900's 32 percent of the project area burned in wildfire. There have been two more recent fires in the upper elevations of the project area; the Logan Burn in 1998 (1724 acres) and the Felix Fire in 2007 (875 acres). Since 1950 approximately 27 percent of the project area has had either regeneration or intermediate harvest.

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 occur-

rence. 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).

"[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 spawn-

ing 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 Pacific Northwest and the Northern Rockies.

Thank you for your attention to these concerns.

Sincerely yours,
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