

September 16, 2019

Objection Reviewing Officer

USDA Forest Service

Northern Region

26 Fort Missoula Road

Missoula, MT 59804

This letter is an objection, pursuant to 36 CFR section 218, to the Soldier-Butler Project Draft Decision Notice on behalf of the Alliance for the Wild Rockies, “AWR.”.

I mailed “Fire Ecology in the Rocky Mountain by William Baker” via U.S. mail. I emailed the other attachments to FS-appeals-northern-regional-office.

The Responsible Official is Ninemile District Ranger Erik Tomasik, in the Lolo National Forest. The Soldier-Butler Project is planned for the Ninemile Ranger District of the Lolo National Forest (LNF) in Missoula County, Montana.

NOTICE IS HEREBY GIVEN that AWR objects pursuant to 36 CFR section 218 to the Responsible Official's selection of the proposed Selected Action, which is a blend of activities presented in the Soldier-Butler Project Environmental Assessment (EA) which includes logging and/or burning on 9,975 acres and building 9.4 miles of temporary roads.

AWR is objecting to this project on the grounds that implementation of the Selected Alternative would not be fully in accordance with the laws governing management of the national forests such as Clean Water Act, the ESA, NEPA, NFMA, the Lolo Forest Plan and the APA, and will result in additional degradation in already degraded watersheds and mountain slopes, further upsetting the wildlife habitat, ecosystem and human communities. Our objections are detailed below.

As a result of the Draft DN, individuals and members of the above-mentioned groups would be directly and significantly affected by the logging and associated activities. Appel-

lants are conservation organizations working to ensure protection of biological diversity and ecosystem integrity in the Wild Rockies bioregion (including the LNF). The individuals and members use the project area for recreation and other forest related activities. The selected alternative would also further degrade the water quality, wildlife and fish habitat. These activities, if implemented, would adversely impact and irreparably harm the natural qualities of the Project Area, the surrounding area, and would further degrade the watersheds and wildlife habitat.

1. Objectors names and addresses:

Lead Objector Mike Garrity, Executive Director, Alliance
for the Wild Rockies

P.O. Box 505; Helena, MT 59624

Phone 406 459-5936

2. Signature of Lead Objector:

Signed this____13th__day of September, 2019 by Lead
Objector,

/s/ Michael Garrity

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

4. Name of the Proposed Project, Responsible Official,
National Forest and Ranger District where Project is:
Soldier-Butler Project;

Ninemile District Ranger Erik Tomasik, Lolo National Forest is the Responsible Official; The project is in the Nine-mile Ranger District of the Lolo National Forest. Ranger Tomasik chose modified alternative in the Draft Decision Notice and FONSI.

NOTICE IS HEREBY GIVEN that AWR object pursuant to 36 CFR section 218 to the Responsible Official's adoption

of the selected Alternative. As discussed below, the Soldier-Butler Project as proposed violates the Clean Water Act, the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the Endangered Species Act (ESA), the Lolo Forest Plan and the Administrative Procedure Act (APA).

Location

This Draft Decision Notice calls for: logging (cutting by hand) and or prescribed burning on 9,975 acres and building 9.4 miles of temporary roads in the Lolo National Forest (LNF) in Missoula County. The project is about 7 miles northwest of Huson, Montana in the Ninemile Ranger District and runs from the East Fork of Burnt Creek southwest to Butler Creek and from Ninemile RD #412 to the Reservation Divide.

5. Specific Issues Related to the Proposed Projects, including how Objectors believes the Environmental Analysis or Draft Decision Notice and FONSI specifically violates

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

Thank you for the opportunity to object on the Soldier-Butler Project. Please accept this objection from me on behalf of the Alliance for the Wild Rockies.

6. Suggested Remedies that would Resolve the Objection:

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

7. Supporting Reasons for the Reviewing Office to Consider:

This landscape has very high wildlife values, including for the threatened grizzly bear, lynx, big game species, and wildlife dependent upon unlogged. The project is also in lynx critical habitat. The project area will be concentrated within some of the best wildlife habitat in this landscape

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

Suggested Remedies to Resolve the Objection:

The agency can choose the No Action Alternative and the agency needs to complete the surveys for lynx required by U. S. District Court to review the proper designation of lynx critical habitat.

The LNF must also consult with the Fish and Wildlife Service forest wide on and the impact of the project on lynx, lynx critical habitat, grizzly bears, bull trout critical habitat, bull trout and wolverines. Without these corrective actions, implementation of the the Soldier-Butler project, will lead to severe, irretrievable impacts on almost all wildlife species on the Forest. These impacts, if continued across the LNF for other projects, will erode the viability of a huge number of wildlife species across this landscape.

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

We wrote in our April 15, 2019 comments:

“Frenchtown Face

The EA reveals that the Forest Service (FS) has arbitrarily and without public notice significantly altered the implementation of the Frenchtown Face project, as described in the ROD authorizing that project. Perhaps the most significant changes to that project involve not implementing road decommissioning as the ROD committed to. The Soldier-Butler project falls partially within the Frenchtown Face project area, which also would cause cumulative impacts with FrenchtownFace. The Soldier-Butler EA states that the Frenchtown Face project is still ongoing. The FS is obligated to halt Frenchtown Face project implementation and re-initiate the NEPA process for Frenchtown Face, at least to prepare a Supplemental EIS because of all the implementation changes. However due to the overlapping and cumulative effects, we also believe the FS is obligated to analyze both Frenchtown Face

and Soldier-Butler in the same EIS. Preparing only an EA for the latter violates NEPA.

Perhaps the FS's reneging on road decommissioning commitments made in the Frenchtown Face ROD indicates there ought to be a high level of skepticism attributed to what the agency writes in the Soldier-Butler EA."

The Forest Service responded on page 6 of the Draft Decision Notice (DDN) "***Per CFR 212.54 Revision of Designations, the Soldier-Butler project is revising road decisions from a past NEPA Decision (i.e., Frenchtown Face) to meet changing conditions.***"

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

Remedy: Write an EIS for project that complies with the law.

We wrote on pages 61-67 of our comments starting with:

"Climate change and carbon sequestration

Global climate change is a significant threat to humanity and forests. Climate change is caused by excess CO₂ and

other greenhouse gases transferred to the atmosphere from other pools. All temperate and tropical forests, including those in this project area, are an important part of the global carbon cycle...”

The Forest Service responded: *“Climate change was discussed in the Forested Vegetation Report pp. 7-9, 13, 23, 28-33, 36-38, 43, 46, 48, 56, 61-62, and 64.”*

The Forest Vegetation Report stated logging is the cure for climate change. Only by logging can the forest be made healthy to adapt to climate change.

The NEPA requires a “hard look” at climate issues, including cumulative effects of the “treatments” in the proposed project when added to the heat, drought, wind and other impacts associated with increased climate risk. Regeneration/Restocking failure following wildfire, prescribed fire and/or mechanical tree-killing has not been analyzed or disclosed. There is a considerable body of science that sug-

gests that regeneration following fire is increasingly problematic.

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

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

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

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

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

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

Global warming and its consequences may also be effectively irreversible which implicates certain legal consequences under NEPA and NFMA and ESA (e.g., 40 CFR § 1502.16; 16 USC §1604(g); 36 CFR §219.12; ESA Section

7; 50 CFR §§402.9, 402.14). All net carbon emissions from logging represent “irretrievable and irreversible commitments of resources.”

It is clear that the management of the planet’s forests is a nexus for addressing this largest crisis

ever facing humanity. Yet the EA fails to even provide a minimal quantitative analysis of project- or agency-caused CO₂ emissions or consider the best available science on the topic. This is

immensely unethical and immoral. The lack of detailed scientific discussions in the EA concerning climate change is far more troubling than the document’s failures on other topics, because the consequences of unchecked climate change will be disastrous for food production, sea level rise, and water supplies, resulting in complete turmoil for all human societies. This is an issue as serious as nuclear annihilation (although at least with the latter we’re not already pressing the button).

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

The EA fails to consider that the effects of climate change on the project area, including that the “desired” vegetation conditions will likely not be achievable or sustainable. The EA fails to provide any credible analysis as to how realistic and achievable its desired conditions are in the context of a rapidly changing climate, along an unpredictable but changing trajectory.

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

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

The best scientific information strongly suggests that management that involves removal of trees and other biomass increases atmospheric CO₂. Unsurprisingly the EA doesn’t state that simple fact.

The EA fails to present any modeling of forest stands under different management scenarios. The FS should model the carbon flux over time for its proposed stand management

scenarios and for the various types of vegetation cover found on the GNF.

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

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

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

Remedy: Choose the No Action Alternative. Revise the Forest Plan to take a hard look at the science of climate change. Alternatively, draft and new EIS for this project if the FS still wants to pursue it, which includes an analysis that examines climate change in the context of project activities and Desired Conditions. Better yet, it's time to prepare an EIS on the whole bag of U.S. Government climate policies.

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

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

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

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

“At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed

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

We wrote in our comments:

Forest “vegetation” and “resilience”

The Soldier-Butler EA states, “This action responds to the goals and objectives outlined in the Lolo Forest Plan, and helps move the project area towards desired conditions described in that plan.” However this makes little sense, because “desired conditions” are hardly mentioned in the Forest Plan. The Forest Plan has no definition. The FS has not performed the requisite NEPA process to adopt certain desired conditions as the driver for project Purpose and Need.

The Forest Service responded:

FS Response: For clarification, the Lolo Forest Plan (1986) defines a goal as a “concise statement that describes a desired condition to be achieved. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed” (VII-14)

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

Where is the reference to restocking? Monitoring data and analysis? If monitoring has been done there is no disclosure documenting the scope and probability of post-fire regeneration failures in the project area. NFMA requires documentation and analysis that accurately estimates climate risks driving regeneration failure and deforestation – all characteristic of a less “resilient” forest.

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

The Forest Plan is based on assumptions largely drawn from our past that no longer hold true. These assumptions, made decades ago, must be challenged, and amended, where overwhelming evidence demonstrates a change of course is critical. It is time to take a step back, assess the present and future and make the necessary adjustments, all in full public disclosure to the Congress and the American people. Many acres of (conifers) In many areas, conifers haven't shown “resilience” enough to spring back from disturbance. Regeneration is already a big problem. (Emphasis added).

Both RPA and NFMA mandate long-range planning which impose numerous limitations on commodity production, including grazing, timber harvesting practices and the amount of timber sold annually. These long-range plans are based on assumptions, which are based on data, expert opinion, public participation and other factors that all, well almost all, view from a historical perspective. Assumptions that drove forest planning guidance decades ago, when climate risk was not known as it is today, are obsolete today.

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

A proper reexamination of the assumptions relating to resilience and sustainability contained in the Forest Plan is necessary. Scientific research supporting our comments focus on important data and analysis. A full discussion and disclosure of the following is required: 1) trends in wild-fires, insect activity and tree mortality, 2) past regeneration success/failure in the project area, and 3) climate-risk science – some of which is cited below. Our comments, and supporting scientific research clearly “demonstrates

connection between prior specific written comments on the particular proposed project or activity and the content of the objection...”

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

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

these two contexts. At least the Forest Service should discuss the following studies:

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

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

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

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

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

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

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

The Forest Service must analyze all of the cumulative the impacts of the Soldier-Butler project in an EIS. The project is in violation of NEPA, NFMA, the Forest Plan and the APA.

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

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

The regulations shall include, but not be limited to-

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

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

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

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

(a) Resource protection. All management prescriptions shall—

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

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

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

The project-level, and programmatic-level (Forest Plan) fail to publicly disclose the current and future impacts of climate risk to our national forests. NEPA requires cumulative effects analysis at the programmatic level, and at the project-level. The failure to assess and disclose all risks associated with vegetative-manipulation (slash and burn)

units in the project area in the proper climate-risk context/ scenario violates the NFMA, NEPA and the APA.

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

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

The Forest Plan is based on assumptions largely drawn from our past. These assumptions must be challenged, and

amended, where overwhelming evidence demonstrates a change of course is critically important. It is time to take a step back, assess the future and make the necessary adjustments, all in full public disclosure to the Congress and the American people.

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

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

Excerpt:

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

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

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

“This may no longer be the case.”

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

The selected scientific research presented above is only a sampling of the growing body of evidence that supports the need to disclose the consequences of the proposed action in a proper context - a hotter forest environment, with more frequent drought cycles. This evidence brings into question the Purpose and Need for the project. It also requires the FS to reconsider the assumptions, goals and expected desired future condition expressed in the existing Forest Plan. Plan expectations must be amended at the programmatic level before proceeding with proposed project-level action(s). According to best available science, implementing the project will most likely accomplish the opposite of the desired future condition. We can adjust as we monitor and find out more. However, to willfully ignore what we do know and fail to disclose it to the public is a serious breach of public trust and an unconscionable act. Climate risk is upon us. A viable alternative to the proposal is not only reasonable and prudent, but it is the right thing to do.

The District Court of Montana ruled in Case 4:17-cv-00030-BMM that the Federal government did have to evaluate the climate change impacts of the federal government coal program. Please find the order attached.

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

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

The project is in violation of NEPA, NFMA, the APA, the ESA for not examining the impacts of the project on climate change. The project will eliminate the forest in the project area. Forests absorb carbon. The project will destroy soils in the project area. Soils are carbon sinks.

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

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

ROB CHANEY rchaney@missoulian.com Mar 11, 2019

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

Courtesy Kim Davis



Fire-scarred forests like the Sapphire Range of the Bitterroot Valley may become grasslands because the growing seasons have become too hot and dry, according to new research from the University of Montana.

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

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

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

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

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

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

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

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

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

The study shows such conditions have evaporated on virtually all sites since 2000.

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

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

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

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

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

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

Rob Chaney

Natural Resources & Environment Reporter

Natural Resources Reporter for The Missoulian.

We wrote in our comments:

“Published scientific reports indicate that climate change will be exacerbated by logging, and that climate change will lead to increased wildfire severity (including drier and warmer conditions that may render obsolete the proposed effects of the Project). The former indicates that the Soldier-Butler Project may have a significant adverse effect on the environment, and the latter undermines the central underlying purpose of the Project. Therefore, the Forest Service must candidly disclose, consider, and fully discuss the published scientific papers discussing climate

change in these two contexts. At least the Forest Service should discuss the following studies:

- *Depro, Brooks M., Brian C. Murray, Ralph J. Alig, and Alyssa Shanks. 2008. Public land, timber harvests, and climate mitigation: quantifying carbon sequestration potential on U.S. public timberlands. Forest Ecology and Management 255: 1122-1134.*
- *Harmon, Mark E. 2001. Carbon sequestration in forests: addressing the scale question. Journal of Forestry 99:4: 24-29."*

Please find Depro et al and Harmon attached.

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

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

"Abstract

Climate change is increasing fire activity in the western United States, which has the potential to accelerate climate-induced shifts in vegetation communities. Wildfire can catalyze vegetation change by killing adult trees that could otherwise persist in climate conditions no longer suitable

for seedling establishment and survival. Recently documented declines in post-fire conifer recruitment in the western United States may be an example of this phenomenon. However, the role of annual climate variation and its interaction with long-term climate trends in driving these changes is poorly resolved. Here we examine the relationship between annual climate and post-fire tree regeneration of two dominant, low-elevation conifers (ponderosa pine and Douglas-fir) using annually resolved establishment dates from 2,935 destructively sampled trees from 33 wildfires across four regions in the western United States. We show that regeneration had a nonlinear response to annual climate conditions, with distinct thresholds for recruitment based on vapor pressure deficit, soil moisture, and maximum surface temperature. At dry sites across our study region, seasonal to annual climate conditions over the past 20 years have crossed these thresholds, such that conditions have become increasingly unsuitable for regeneration. High fire severity and low seed availability further reduced the probability of post-fire regeneration. Together, our results demonstrate that climate change combined with high severity fire is leading to increasingly fewer opportunities for seedlings to establish after wildfires and may lead to ecosystem transitions in low-elevation ponderosa pine and Douglas-fir forests across the western United States.”

Because of climate change and lack of a seed source for new trees, the Soldier-Butler Project could result in the forest not growing back after the project is completed in violation of NEPA, the roadless rule and because the Forest Service did not analyze this the Soldier-Butler project is not

following the best available science and in violation of NEPA, the ESA and the APA.

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

Dr. Baker writes: ***“Programs to generally reduce fire severity in dry forests are not supported and have significant adverse ecological impacts, including reducing habitat for native species dependent on early-successional burned patches and decreasing landscape heterogeneity that confers resilience to climatic change.”***

Dr. Baker concluded: ***“Dry forests were historically renewed, and will continue to be renewed, by sudden, dramatic, high-intensity fires after centuries of stability and lower-intensity fires.”***

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

“Management issues

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

Dr. Baker’s paper is the best available science. Please explain why this project is not following the best available science. The Draft Decision Notice is in violation of NEPA.

Remedy, choose the No Action Alternative or write an EIS that complies with the law.

In “Fire Ecology in Rocky Mountain Landscapes” by William Baker, Dr. Baker writes on page 435, “ ***...a prescribed fire regime that is too frequent can reduce species diversity (Laughlin and Grace 2006) and favor invasive species (M.A. Moritz and Odion 2004). Fire that is entirely low severity in ecosystems that historically experience some high-severity fire may not favor germination of fire-dependent species (M.A. Moritz and Odion 2004) or provide habitat key animals (Smucker, Hutto, and Steele 2005).***” Baker continues on page 436: “***Fire rotations equal the average mean fire interval across a landscape and are appropriate intervals at which individual points or the whole landscape is burned. Composite fire intervals underestimate mean fire interval and fire rotation (chap 5) and should not be used as prescribed burning intervals as this would lead to too much fire and would likely lead***

to adversely affect biological diversity (Laughlin and Grace 2006).”

Please find (Laughlin and Grace 2006) attached.

We wrote in our comments:

“The Forest Service should use the best available science regarding protecting these structures.

Fire Ecology in Rocky Mountain Landscapes, by William Baker says the Forest Service is over stating the frequency of wildfire.

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

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

Dr. Baker estimates the high severity fire rotation to be 135 - 280 years for lodgepole pine forests. (See page 162.).

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

Schoennagel et al (2004) states: “High-elevation subalpine forests in the Rocky Mountains typify ecosystems that experience infrequent, high-severity crown fires []. . . The most extensive subalpine forest types are composed of Engelmann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and lodgepole pine (*Pinus contorta*), all thin-barked trees easily killed by fire. Extensive stand-replacing fires occurred historically at long intervals (i.e., one to many centuries) in subalpine forests, typically in associa-

tion with infrequent high-pressure blocking systems that promote extremely dry regional climate patterns.” Please find Schoennagel et al (2004) attached.

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

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

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

Schoennagel et al (2004) states: “Contrary to popular opinion, previous fire suppression, which was consistently effective from about 1950 through 1972, had only a minimal effect on the large fire event in 1988 []. Reconstruction of historical fires indicates that similar large, high-severity fires also occurred in the early 1700s []. Given the histori-

cal range of variability of fire regimes in high- elevation subalpine forests, fire behavior in Yellowstone during 1988, al-though severe, was neither unusual nor surprising.”

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

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

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

Please find Schoennagel et al (2004) attached.

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

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

Grizzly Bears.

We wrote in our scoping comments: “We wrote in our comments:

Grizzly Bear

The effects to grizzly bears from the project include potential disturbance or displacement due to human presence, road construction and use, motorized use and other mechanized equipment. The presence of these activities and the presence of roads may lead grizzly bears to avoid otherwise suitable habitat. The project is “Likely to Adversely Affect” the grizzly bear therefore formal consultation with the US Fish and Wildlife Service (FWS) is required.

The Interagency Grizzly Bear Guidelines (IGBC 1986) document directs the FS to manage for “multiple land use benefits” to the extent that these uses are compatible with grizzly recovery. The EA does not disclose if adverse project or cumulative impacts are consistent with the requirement to prioritize the needs of the grizzly bear for the applicable Management Situation(s).

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

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

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

Grizzly bears are winter-sleepers rather than true hibernators. If high density motorized routes are known to disturb, displace, habituate, and raise mortalities among grizzlies in spring, summer, and fall, there's no logical, or scientific reason to believe they don't do the same to sleeping bears in winter. The Biological Opinion on the forest plan for the Kootenai National Forest states:

In the CYE and NCDE, incidental take may occur where late season snowmobiling overlaps with grizzly bear post-denning habitat. The incidental take is expected to be in the form of harassment to individual female grizzly bears

and/or cubs caused by premature den emergence or premature displacement from the den site area, resulting in reduced fitness of females and cubs. We expect the amount and extent of take would be very low.

The Soldier-Butler EA fails to demonstrate that such incidental take is in fact low, admitting that snowmobile effects are expected to increase because of the logging. That Biological Opinion also recognizes:

The Revised Plan's desired condition for patches which includes a range of larger opening sizes may result in adverse effects if lack of cover leads to under use of foraging habitat or

2

increased risk of human-grizzly bear conflicts causing mortality of a grizzly bear. Openings created by timber harvest, depending on site conditions, may retain features that interrupt the line of sight and provide cover for bears (J. Anderson 03/12/2012 pers. comm.).

The EA fails to show that the openings to be newly created by the project won't exceed levels of current incidental take.

The FS's current management strategy allows "temporary" increases in road density as if the habitat would then get reprieve from such "temporary" adverse effects. However, the FS recognizes no genuine limitations on

how much, how often and for how long these “temporary” adverse effects will occur or persist.

Hammer, 2016 explains how the proposed post-delisting NCDE conservation strategy “will (not) maintain bear habitat security levels that existed in 2011, it is instead lowering the goal posts on what is considered secure bear habitat.” The NCDE conservation strategy would lower current protections by allowing such harmful activities in Security Core as the opening of roads to public motorized uses like firewood gathering, unlimited amounts of non-motorized trails and human activity, and logging projects that reduce Security Core for half a decade. Moreover, the strategy would excuse logging roads from limits on Total Motorized Route Density even though they have not been decommissioned, have not been removed from the road system, and are instead being “stored” for future logging—which also makes them more vulnerable to continued use as trails. (Hammer, 2016.)

We also incorporate McLellan, et al (2000), Hammer, 2013, Natural Resources Defense Council, 2013; and Bader, 2016 which support the conclusions of Hammer, 2016.

The EA does not demonstrate consistency with the Amendment to the Forest Plan of the Lolo National Forest concerning habitat management direction for the Northern Continental Divide Ecosystem grizzly bear population.

Within these comments, we incorporate AWR's February 12, 2018 Objection¹ to the draft Record of Decision for the Amendments to the Forest Plans of the Lolo, Kootenai, and Helena- Lewis and Clark national forests concerning habitat management direction for the Northern Continental Divide Ecosystem grizzly bear population. This is necessary because the Soldier- Butler Project would implement the forest plan as amended by those Amendments (hereinafter, "Grizzly Amendments" or "Grizzly Amendment") and subsequent to our Objection, the FS did not provide adequate relief to rectify the deficiencies in law, policy and regulation our Objection identified.

Please note that AWR's Objection to the Grizzly Amendments itself incorporated other objections and comments, and so those are likewise incorporated herein. Those include the

¹ That was also an Objection to the Flathead National Forest Land and Resource Management Plan and the Flathead National Forest Species of Conservation Concern determination and list, and to the degree the science, law, and policy we discuss therein apply to Forest Plan implementation of Lolo National Forest projects, it also applies to the Soldier-Butler Project.

objections by Swan View Coalition (SVC), Friends of the Wild Swan (FOWS), and Brian Peck found at:

http://www.swanview.org/reports/Brian_Peck_Forest_Plan_Objection.pdf, http://www.swanview.org/reports/FOWS_Forest_Plan_Objection.pdf, http://www.swanview.org/reports/SVC_Forest_Plan_Objection.pdf and previous comments and other communications from AWR, SVC, FOWS, and Brian Peck concerning the Grizzly Amendments.

For your convenience, the SVC DEIS comment letters (which AWR's comments on the Grizzly Amendments DEIS incorporated by permission) are located at: http://www.swanview.org/articles/whats-new/svcs_comments_on_draft_flathead_forest_plan/230

Also as comments on the Soldier-Butler EA, we incorporate the Swan View Coalition and Friends of the Wild Swan February 8, 2019 Sixty-Day Notice of Intent to Sue to Remedy Violations of the Endangered Species Act in the Revised Forest Plan for the Flathead National Forest and in the U.S. Fish and Wildlife Service's Biological Opinion on the Plan, which are being transmitted via email as a separate attachment along with this letter. That Sixty-Day Notice explains that the FS had adopted Amendment 19 to the Forest Plan of the Flathead National Forest in its recognition of best available science at the time, and that the Grizzly Amendments now fail to incorporate such best available science and therefore offer weaker protection for the Threatened grizzly bear.

In sum, the Grizzly Amendments remain controversial and contested. We believe the FS has not applied best available science in adopting the Grizzly Amendments and

therefore is not in compliance with NEPA, NFMA, and the ESA.

The EA does not include an analysis of season grizzly bear habitat components. It does propose to push grizzly bears around regardless of seasonal habitat needs: “Any bears that are in the project area may be disturbed and/or temporarily displaced into the upper elevations of the project area where open and high-use road densities are low... or shift their use to other parts of the Ninemile DCA.”

The EA claims that grizzly bears are only recently beginning to expand their range, but fails to explain what’s different all of a sudden. In reality, grizzly bears have been trying to occupy previously suitable habitat for decades; the habitat in the project area is marginal because of the cumulative impacts of management and other human activities. The FS does not want to be accountable for its share of these impacts.

Instead, we have “new road construction under Alternative B... would provide new non- motorized access into an area that is currently very difficult to access.”

The EA fails to take a hard look at cumulative activities in adjacent areas, e.g. the expansion of the footprint of the ski area on national forest lands at Snowbowl. The EA doesn’t explain how grizzly bear populations in the Selway-Bitterroot and Cabinet/Yaak and Selkirk recovery zones could ever recover, given management direction in the NCDE Conservation Strategy for connectivity areas

such as the project area maintains conditions highly adverse to bears.

The Soldier-Butler Project EA fails to disclose the questionable effectiveness road closures for the purpose of eliminating human access behind closures. We incorporate the Amended Complaint for case CV-18-67-DWM for the purposes of explaining how roads affect wildlife and that ineffective closures on national forest land are all too common.

The Forest Service responded: *“Please see Wildlife Report”*

The Page 72-73 of the Wildlife report states:

The Lolo NF encompasses portions of three grizzly bear recovery areas: the Northern Continental Divide, Cabinet-Yaak, and Bitterroot Ecosystems. The Soldier-Butler project area is located in between all of these recovery areas, and thus provides a linkage area between them. The NCDE Conservation Strategy (NCDE Subcommittee 2018) identifies the Ninemile Demographic Connectivity Area (DCA) as an area being important for occupancy by female grizzly bears and area that will support eventual dispersal to the Cabinet-Yaak and Bitterroot Ecosystems from the expanding NCDE grizzly population (Figure 12).

The Lolo National Forest’s Forest Plan was amended on 27 December 2018 (83 FR 66673) to include measures de-

signed to conserve grizzly bears. These amendments became effective immediately. The standard most applicable to this project is NCDE-LNF Zone 1-STD-01. The portion that pertains to the Ninemile DCA reads:

Inside the Ninemile demographic connectivity area, there shall be no net increase above the baseline in the density of roads and trails open to public motorized use during the non-denning season on National Forest System lands. Density is calculated by dividing the total miles open to public motorized use on NFS lands during the non-denning season, by the total square miles of NFS lands in that same area. ** Note that this standard does not apply to temporary roads, as *The baseline for the NCDE is defined as conditions as of December 31, 2011, as modified by changes in numbers that were evaluated and found to be acceptable through the Endangered Species Act Section 7 consultation with USFWS while the grizzly bear was listed as threatened. The baseline will be updated to reflect changes allowed under the standards and guidelines.”*

Like the mountain caribou’s habitat, Cabinet-Yaak grizzly habitat is also fragmented by logging, roads, powerlines, and mining. As a result, this extremely small population of less than 50 individuals is isolated, failing recovery targets, and suffering from extremely high mortality rates.

This population is “in danger of extinction” and warrants uplisting from threatened to endangered status.

The Forest Service needs to consult with the FWS on an updated environmental analysis for the “Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones,” which are also referred to as the The Access Amendment is the product of years of public interest litigation on behalf of the imperiled Cabinet-Yaak grizzly bear. The well-established scientific consensus is that roads pose the most imminent risk to this grizzly population.

Ninety percent of this population’s Recovery Zone habitat is located on public National Forest lands. Thus, the federal government has the power to limit road density for grizzly bear protection on the vast majority of its habitat and thereby prevent the extinction of this grizzly population. Ostensibly, this is the purpose of the Access Amendment.

However, since the Access Amendment was approved in 2011, the U.S. Forest Service has prepared multiple years of monitoring reports regarding its implementation of road closures in grizzly habitat. These monitoring reports establish that these road closures are routinely violated and therefore ineffective: members of the public regularly ignore signs, drive around gates or earthen berms,

remove obstructions such as boulders or logs, or simply create their own new motorized routes.

Although these monitoring reports are only required for the Recovery Zone, there are incidental observations in these reports regarding closure violations found in grizzly habitat outside of the Recovery Zone, in the government-designated “Bears Outside Recovery Zone” or “BORZ” areas.

Page 64 of the Draft DN shows concerns from MT FWP about roads and grizzly bear security.

“...construction of new permanent roads in the project area, especially in the Pine Creek area and between Kennedy and Butler creeks...would compromise important wildlife values and big game security in these areas. We believe commercial treatments would compromise wildlife values by removing too much cover and structural diversity, especially in units 25, 26, and 3. If treatments and road building were to move forward as outlined in Alternative B, FWP recommends a strong commitment to effective closures on those roads.”

The project area is in Management Situation 1. If there is a conflict between grizzly bears and a management decision in MS I habitat, the conflict needs to be resolved in favor of the grizzly.

Page 88 of the Wildlife Report states:

“Helicopters could be used throughout much of the project area to implement prescribed burning. They would definitely be used in the EMB units (101, 102, 103), and could be used in many other areas that do not involve hand piling and burning piles. Because of the “burn windows” that often limit the extent of prescribed burning that can be done at any given time, it is unlikely that use of more than 2 - 4 consecutive days would occur, and likely not all in one area. Most of the burning would occur in spring, but not in crucial spring habitats for grizzly bears. The high elevation EMBs would likely be burned in fall. Helicopters can cause stress and disturbance to grizzly bears, as detailed in the Guide to Effects Analysis of Helicopter Use in Grizzly Bear Habitat (Montana/Northern Idaho Terrestrial Level 1 Team, 2009), and the effects would likely be more pronounced in the EMB units in the IRA and high elevation areas, where bears are less conditioned to expect disturbances from motorized equipment. The duration of the disturbance would be fairly short (a few days) and there would be north slopes and other areas in the IRA for displaced bears to seek refuge. Helicopter use for burning in units along open roads would have the least impact on grizzly bears, as those areas already receive regular disturbance. The overall picture of disturbance for the project area is that at worst it could deter grizzly bears from using parts of the project area or establishing their home ranges there during project implementation, or at best it would cause bears to shift around their habitat use in the project area more frequently than they would under natural conditions. In general, the mid-to

upper-elevations of the project area would remain undisturbed, especially the IRA, which would provide undisturbed habitat for grizzly bears with the exception of the few days that disturbance would be occurring within burn units. Areas for grizzly bears to find undisturbed or minimally disturbed habitat in the Ninemile DCA would exist during project implementation. Figure 13 shows areas where timber sale and/or burning activities could occur concurrent with Soldier Butler implementation, and areas where open public motorized roads exist. The most likely areas for undisturbed habitat for any bears that may want to avoid the disturbance in the Soldier Butler area would be the remote high elevations on the other side in the Reservation Divide IRA, in the unroaded portions of the Confederated Salish and Kootenai Tribal lands east of the divide, in the northern part of the Ninemile DCA, and in the Ninemile Divide IRA to the west of the project area. These would all provide areas for displacement or colonization. Given that grizzly bears are in the process of re-establishing themselves in the DCA and home ranges are not fully established, the risk of bears being displaced into other bear's territory and suffering potential bear-to-bear mortality or other severe negative interactions, is not expected to result in mortality to grizzly bears, but could negatively affect one or a few individuals over the course of the project. Thus the intensity of impacts of disturbance would be lower here in the DCA than in the Primary Conservation Area where grizzly home ranges are well established"

In the attached “***Guide to Effects Analysis of Helicopter Use in Grizzly Bear Habitat***,” the Montana/Idaho Level 1 Terrestrial Biologist Team developed assessment guidelines in 2009 to assist in analyses of helicopter effects on grizzly bears.

The guidance document finds: “***Helicopter use in core habitat likely results in more pronounced disturbance reaction in grizzly bears since bears are not conditioned to expect disturbances from motorized equipment or vehicles in core habitat.***” In general, the guidance paper finds: “***actions which compromise the purpose of core habitat are not easily characterized as ‘insignificant’ or ‘discountable.’***”

The Forest Service states: “***Project activities in core areas (logging and road construction/use) would temporarily reduce the security that these areas provide grizzly bears and would result in disturbance and displacement. The direct effects of disturbance is expected to last for the life of the project activities (3-5 years for timber sales, up to 10 for prescribed fire).***”

The Forest Service Biological Assessment states: “***Use of helicopter ignition at low elevations (< 500 feet AGL) could cause grizzly bears to flee to cover or move away from the area.***”

The Biological Assessment states: “***Treatments during the spring could impact grizzly bear use of grassy, south facing openings while treatments in the fall could interfere***

with grizzly bear accessibility to fall foods such as berries.”

Grizzly bears make “extensive use of forested cover,” including using forested habitat for resting, general concealment, thermal relief in summer, and foraging and hunting.

Re-initiation of consultation on the Access Amendment in this case is triggered under subsections (a), (b), and/or (c). First, the recurring and pervasive breaches of road closures since 2011 indicate that permitted incidental take is exceeded on a recurring basis, thereby triggering reinitiation of consultation under subsection (a). Second, eight years of evidence of pervasive and recurring road closure breaches constitutes new information that reveals new effects on grizzly bears that were not previously considered, thereby triggering reinitiation of consultation under subsection (b). Third, the agencies’ failure to ensure that all road closures are effective at all times constitutes a modification of the action that causes an effect to grizzly bears that was not previously considered, thereby triggering reinitiation of consultation under subsection (c). Finally, any doubt pertaining to any one of these arguments must be resolved in favor of the grizzly bear, not the agencies.

1. Re-initiation of consultation is required under subsection (a) because the amount or extent of taking specified in the incidental take statement is exceeded on a recurring basis.
2. Re-initiation of consultation is required under subsection (b) because new information reveals effects of the action

that may affect listed species in a manner or to an extent not previously considered.

mandatory Forest Service monitoring reports issued beginning in 2012 have uncovered recurring violations of road closures in the Cabinet-Yaak and Selkirk Grizzly Recovery Zones and, incidentally, outside the Recovery Zones as well. For example, in 2017 alone, the Forest Service found 13 violations in the areas outside both Recovery Zones. These violations include the removal of a barrier in the Clark Fork Zone.

Re-initiation of consultation is required under subsection (c) because the action has been modified in a manner that causes an effect to the listed species that was not considered in the biological opinion.

The foundation of the Access Amendment is the premise that road closures will be effective. In effect, this is the primary “promised conservation measure” in the Access Amendment. Nonetheless, as discussed above at length, both Forest Service monitoring reports and Alliance’s independent investigation provided to the Forest Service in the access amendment case confirm the reality of recurring and pervasive failures of road closure devices throughout grizzly bear habitat.

The “failure of [this] promised conservation measure[]” means that the Access Amendment has been “modified in a manner that causes an effect to the listed species. . .that was not considered in the biological opinion” Ctr. for Biological Diversity, 698 F.3d at 1114-15. 50 C.F.R.

§402.16(c). Therefore, reinitiation of consultation is required.

On August 28, 2019, the Forest Service sent out a scoping notice stating: *The U.S. Forest Service is soliciting comments on the BMU 22 Compliance project, which would conduct management actions on specific roads and trails within the portion of the Cabinet-Yaak Grizzly Bear Recovery Zone that overlaps the northwestern corner of the Plains/Thompson Falls Ranger District, Lolo National Forest (see enclosed vicinity map). The purpose of the project is to comply with the Lolo Forest Plan¹ as amended in 2011 by the Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones² Record of Decision [hereafter referred to as the Access Amendment], which established access standards for wheeled motorized vehicle use during the active bear year³ within the recovery zones. The Forest Service will host a public meeting to share more information and answer questions about the proposal. The meeting will be held on September 19th from 6:00 to 7:30 p.m. at the Plains School library located at 412 Rittenour Street in Plains. Background Grizzly bears throughout the lower 48 states are listed as threatened under the Endangered Species Act. In 1993, the U.S. Fish and Wildlife Service (USFWS) developed the Grizzly Bear Recovery Plan that established six recovery zones and identified adequate effective habitat as the most important element in grizzly bear recovery. Effective habitat is a reflection of an area's ability to support grizzly bears based on the quality of the habitat and the type/amount of hu-*

man disturbance imposed on it. The USFWS stated that controlling and directing motorized access is one of the most important tools in achieving habitat effectiveness and managing grizzly bear recovery (USDI FWS 1993). By controlling motorized access, certain objectives can be achieved including minimizing human interactions and potential grizzly bear mortality, reducing displacement from important habitats, and minimizing habituation to humans (ibid.). The Access Amendment standards were developed in consultation with the USFWS and grizzly bear research scientists to provide sufficient levels of available habitat while allowing for other authorized uses on National Forest System (NFS) lands (USDI FWS 2011). The standards reflect the unique biological features and social factors within each Bear Management Unit (BMU). Recovery Zones are subdivided into BMUs, which are administratively mapped areas that loosely represent the size of a female grizzly bear's home range and are used as the management and measurement unit for grizzly bears. This project involves BMU 22 (Mt. Headley), the only Cabinet-Yaak Grizzly Bear Recovery Zone BMU on the Lolo National Forest. BMU 22, approximately 162,000 acres in size, is located north of Thompson Falls in the southeastern corner of the Recovery Zone.

The Soldier-Butler project needs to be put on hold until the Lolo national Forest is in compliance with the access

amendment and consultation of the access amendment in re-initiated with the FWS.

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

Remedy: Consult with the FWS on an updated environmental analysis for the “Forest Plan Amendments for Motorized Access Management within the Selkirk and Cabinet-Yaak Grizzly Bear Recovery Zones, also know as the Access Amendment.” Also, consult with the FWS on the impact of using helicopters in MS 1 grizzly bear habitat and get a take permit or choose the No Action Alternative.

We wrote in our comments:

Cumulative Effects

The Soldier-Butler EA is unable to properly analyze and disclose cumulative impacts from past management activities because monitoring information is incomplete or unavailable. The EA cites no results of the monitoring required in the Forest Plan. Also, the most recent the Forest Plan Monitoring and Evaluation Report was published in September 2002, which means monitoring has not been conducted as the Forest Plan requires.

There is apparently no connection between the Soldier-Butler project and what the FS should have learned from decades of monitoring required by the Forest Plan. Major purposes of Forest Plan monitoring is for the agency and public to understand cumulative impacts of management activities and to inform later management in an adaptive

management paradigm. The lack of Forest Plan monitoring means the FS must compensate in project analyses, but from reviewing the EA, that hasn't happened. A proper cumulative effects analysis would include:

- *A list of all past projects (completed or ongoing) implemented in the proposed project area watersheds.*
- *A list of the monitoring commitments made in all previous NEPA documents covering the project area.*
- *The results of all that monitoring.*
- *A description of any monitoring, specified in those past project NEPA documents or the Forest Plan for proposed project area, which has yet to be gathered and/or reported.*
- *A summary of all monitoring done in the project area as a part of the Forest Plan monitoring and evaluation effort.*
- *A cumulative effects analysis which includes the results from the monitoring required by the Forest Plan.*

The Forest Service responded that the cumulative effects analysis is fine.

We disagree and believe an EIS needs to be written to comply with law.

Remedy: Choose the No Action alternative or write an EIS that fully complies with the law.

WOLVERINES

We wrote in on page 45-47 of our comments:

Wolverine

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

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

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

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

Roads result in direct mortality to wolverines by providing access for trappers (Krebs et al., 2007). Trapping was identified as the dominant factor affecting wolverine survival in a Montana study (Squires et al. 2007). Female wolverines avoid roads and recently logged areas, and respond negatively to human activities (Krebs et al., 2007)

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

Roads and human density are important factors influencing current wolverine distribution (Carroll et al. 2001b); and wolverine habitat selection is negatively correlated

with human activity – including roads (Krebs et al. 2007). Wolverine occurrence has shown a negative relationship with road densities greater than 2.8 mi/mi² (1.7 km/km²) (Carroll et al. 2001b).

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

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

Wisdom et al. (2000) state:

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

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

Copeland (1996) found that human disturbance near natal denning habitat resulted in immediate den abandonment but not kit abandonment. Disturbances that could

affect wolverine are heli-skiing, snowmobiles, backcountry skiing, logging, hunting, and summer recreation (Copeland 1996, Hornocker and Hash 1981, ICBEM-P1996f).

Carroll et al. (2001b) state:

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

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

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

- Provide large areas with low road density and minimal human disturbance for wolverine and lynx, especially where populations are known to occur. Manage human activities and road access to minimize human disturbance in areas of known populations.*
- Manage wolverine and lynx in a metapopulation context, and provide adequate links among existing populations.*

- *Reduce human disturbances, particularly in areas with known or high potential for wolverine natal den sites (subalpine talus cirques). Nowhere in the Forest Plan or Soldier-Butler EA can be found a description of the quantity and quality of habitat that is necessary to sustain the viability of the wolverine. The Soldier-Butler EA also fails to analyze and disclose cumulative impacts of recreational activities on wolverine.*

The Forest Service did not prepare a biological assessment for wolverine for the project. Instead, the Forest Service produced regional guidance for all of the National Forests in Forest Service Region One/Northern Region that directs agency biologists not to provide an analysis of The Analysis of the Management Situation Technical Report for Revision of the Kootenai and Idaho Panhandle Forest Plans states:

Direct mortality (related to access) from trapping, legal hunting, and illegal shooting has impacted all wide-ranging carnivores (e.g. lynx, wolverine, grizzly and black bears, wolves)...

...Wolverine populations may have declined from historic levels, as a result of over- trapping, hunting, habitat changes, and intolerance to human developments. As the amount of winter backcountry recreation increases,

wolverine den sites may become more susceptible to human disturbance.

Cumulative effects are not adequately analyzed. The FS's illogical wolverine determination is based in part upon a 2013 memo from the Regional Office (USDA Forest Service 2013c). It appears that FS district level specialists are not allowed to arrive at effects conclusions based upon their own expertise and judgment.

Since the wolverine is Proposed for listing under the ESA, consultation with the FWS is required.

The Forest Service responded: "Refer to Wildlife Report pp. 127 – 135." The wildlife report states their analysis is adequate.

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

Wolverines use habitat ranging from Douglas-fir and lodgepole pine forest to subalpine white-bark pine forest

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

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

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

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

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

that affect movements by transients may be important to population and distributional dynamics.”

Roads and human density are important factors influencing current wolverine distribution (Carroll et al. 2001b); and wolverine habitat selection is negatively correlated with human activity – including roads (Krebs et al. 2007).

Wolverine occurrence has shown a negative relationship with road densities greater than 2.8 mi/mi^2 (1.7 km/km^2) (Carroll et al. 2001b).

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

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

Wisdom et al. (2000) state:

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

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

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

Carroll et al. (2001b) state:

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

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

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

known populations.

- Manage wolverine and lynx in a metapopulation context, and provide adequate links among existing populations.
- Reduce human disturbances, particularly in areas with known or high potential for wolverine natal den sites (subalpine talus cirques).
- The EA fails to consider and use the best available science and fails to insure population viability in violation of NFMA and additionally, violating NEPA's requirements that the FS demonstrate scientific integrity. See 36 C.F.R. 219.3; 40 C.F.R. 1502.24.
The FS fails to set meaningful thresholds and assumes that project-caused habitat losses are insignificant. Of such analyses, Schultz (2010) concludes that “the lack of management thresholds allows small portions of habitat to be eliminated incrementally without any signal when the loss of habitat might constitute a significant cumulative impact.” In the absence of meaningful thresholds of habitat loss and no monitoring of wolverine populations at the Forest level, projects will cause wolverine to be extinct in the Lolo NF over time.

Remedy: Choose the No Action Alternative and consult with the FWS on the impact of the project and on the Forest Plan on wolverines. THE AGENCIES MUST COMPLETE A BIOLOGICAL ASSESSMENT, Get a BIOLOGICAL OPINION from FWS, INCIDENTAL TAKE STATEMENT, AND MANAGEMENT DIRECTION FOREST PLAN AMENDMENT FOR THE FOREST PLAN FOR THE WOLVERINE.

LYNX.

We wrote in our comments starting on page 41:

Canada Lynx

The Soldier-Butler EA fails to consider, apply, and incorporate best available science and fails to demonstrate consistency with all Forest Plan/NRLMD direction, in violation of the Endangered Species Act (ESA). The project will result in unauthorized take as defined by Section 9 of the ESA.

The Forest Service responded:

Wildlife (Wildlife Report, pages 8-9, 73, 81-96, and Amended Biological Assessment): The project “may af-

fect, not likely to adversely affect” (NLAA) lynx and lynx critical habitat. The adverse effects of the treatments on lynx and lynx critical habitat will be minimal.

Allowing the agency to destroy or adversely modify any lynx critical habitat has the potential to appreciably reduce the conservation value of such habitat. The agency cannot simply set a cap at 6% 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 allowing 6% of lynx critical habitat to be destroyed forest-wide will not appreciably reduce the conservation value. Please consult with the USFWS on the NRLMD in lynx critical 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 critical 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.

On March 31, 2008 Gloria Manning, Reviewing Officer for the Chief, issued instructions to the Forest Service regarding two of appellants' claims regarding the Northern Rockies Lynx Management Direction appeal. Please find a copy of our appeal attached.

Claim 1 in the appeal submitted by Friends of the Wild Swan, Alliance for the Wild Rockies and Friends of the Clearwater alleged that the Forest Service violated the National Environmental Policy Act and Administrative Procedures Act by selecting arbitrary criteria to determine whether habitat was occupied. Neither the FEIS nor the amended Conservation Agreement contains any justification for the criteria used to determine whether lynx occupy habitat on National Forests.

Ms. Manning reviewed the appeal record and "found no specific explanation for the selection of this date or indication of whether records of earlier sightings had been reviewed for their relevance or why those earlier records would not be otherwise considered in determining occupied lynx habitat."

She instructed the Forest Service to "provide documentation for the record that more fully describes the rationale for establishing that verified lynx observations or records since 1999, and not earlier, may be used as a basis for determining occupied lynx habitat. This documentation must be provided to all appellants. If the documentation was not

in existence at the time the ROD was signed you will utilize Forest Service Handbook 1909.15, Chapter 18 to determine any subsequent actions that may be necessary as a result of this new information."

Likewise in the Montanans for Multiple Use appeal Ms. Manning instructed the Forest Service "to supplement the FEIS with an analysis of the economic effects associated with commercial timber harvest, in accordance with NEPA regulations at 40 CFR 1502.9. Utilize Forest Service Handbook 1909.15, Chapter 18, to determine any subsequent actions that may be necessary as a result of the new information."

Because of instructions in the Northern Rockies Lynx Management Direction appeal decision the Forest Service is required to consult with the US Fish and Wildlife Service. This was not done in violation of the Endangered Species Act.

The LCNF 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 current 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 LCNF 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 LCNF 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 present a risk of incidental trapping or shooting of lynx or access by other competing carnivores. The risk of road-related adverse effects is primarily a winter season issue.
- are weak in providing guidance for new or existing recreation developments. Therefore, these activities may contribute to a risk of adverse 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 construction 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 habitat and reducing its quality and quantity. Consequently, plans may risk adversely affecting lynx by potentially contributing to a reduction in the geographic range of the species.
- The BA team recommends amending or revising the Plans to incorporate conservation measures that would reduce or eliminate the identified adverse effects to lynx. The programmatic conservation measures listed in the Canada Lynx Conservation 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 factors to lynx in this geographic area:

- Timber harvest and pre-commercial thinning that reduce denning or foraging habitat or converts habitat to less desirable tree species
- Fire exclusion that changes the vegetation mosaic maintained by natural disturbance processes
- Grazing by domestic livestock that reduces forage for lynx prey
- Roads and winter recreation trails that facilitate access to historical lynx habitat by competitors

- Legal (in Montana) and incidental trapping and shooting
- Predation
- Being hit by vehicles
- Obstructions to lynx movements such as highways and private land development

As evidenced by the fact that the Canada lynx is now listed under the Endangered Species Act and has critical habitat in the project area, it is clear that the LCNF must do more than follow its Forest Plan's weak protections provided for lynx. Please demonstrate that the project and its analysis are consistent with all Standards contained in the Lynx Conservation and Assessment Strategy (LCAS) or lynx critical habitat.

What are the effects of logging on landscape pattern on lynx and lynx critical habitat? The LCAS require that the FS:

Maintain suitable acres and juxtaposition of lynx habitat through time. Design vegetation treatments to approximate historical landscape patterns and disturbance processes.

If the landscape has been fragmented by past management activities that reduced the quality of lynx habitat, adjust management practices to produce forest composition, structure, and patterns more similar to those that would have occurred under historical disturbance regimes.

The LCAS sets mandatory Standards that would modify or amend the Forest Plan—steps the LCNF has thus far not accomplished. Important Programmatic Standards include:

Identify key linkage areas that may be important in providing landscape connectivity within and between geographic areas, across all ownerships. (LCAS at 89.)

Develop and implement a plan to protect key linkage areas on federal lands from activities that would create barriers to movement. Barriers could result from an accumulation of incremental projects, as opposed to any one project. (Id.)

Map and monitor the location and intensity of snow compacting activities that coincide with lynx habitat, to facilitate future evaluation of effects on lynx as information becomes available. (LCAS at 83.)

On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU.

Among the standards set out in the LCAS are provisions to maintain denning habitat as discussed in the programmatic lynx BO:

Denning Habitat - Within developmental land allocations, existing Plan direction to maintain old

growth habitat was judged to be adequate to provide for lynx denning habitat for all geographic areas except the Great Lakes. (BO at 31.)

However, the LCNF cannot meet lynx denning requirements unless it is meeting Forest Plan old-growth requirements. The Programmatic BA's analysis of the ability of the Forest Plans, as "amended" by the LCAS, to prevent a "taking" of the lynx is based upon the Forests' meeting such management standards. As the LCNF has not yet proved it is in compliance with old-growth species' viability standards or adequately dealing with forest wide old-growth declines, the project may not be in compliance with the LCAS.

The impacts of both winter and non-winter motorized route densities must be adequately considered. The LCAS states, "the effects of open road densities on lynx are poorly understood" (LCAS at 95).

It is not clear that the LCNF has a complete understanding of the current level of use of the project area for snowmobiles and other motorized recreational users. Please analyze the cumulative impacts on lynx from the additional new roads, additional skid trails, and other logging access routes to be constructed in the project area—roads/access routes that could be used by snowmobilers snowmobiles and other motorized recreational users, snowshoers, and cross country skiers long after the logging activities have stopped.

These roads/access routes can also impact lynx habitat during all seasons because of increased access for humans.

From Ruggiero, et al. (1999: “Lynx metapopulation dynamics operate at regional scales” (p. 24). There must be maps and adequate discussion of the connectivity issue in the EA, making it possible to see the landscape features that affect connectivity and metapopulation dynamics within and between LAUs both within and outside the project area, a goal of the LCAS mapping requirement.

The very existence of roads and compacted travel routes from motorized vehicles in snow adversely affect lynx because of the advantage provided for other predators that normally wouldn't be in portions of the project area in winter.

Any assumption that a project will not adversely impact the lynx simply because LCAS standards and guidelines are met has never been verified. These management guidelines are merely a guess for lynx management, developed by the FS and other government agencies. There has never been an independent scientific peer review of these guidelines, including by lynx experts such as those who prepared the Ruggiero, et al. (1999) research paper upon which the LCAS is largely based.

The issue of providing for the larger landscape needs of far-ranging forest carnivores (including the grizzly bear, gray

wolf, wolverine, fisher, pine marten, lynx, goshawk, etc.) reveals the need to utilize the principles of Conservation Biology on a landscape level. Core areas of relatively undisturbed habitats need to be maintained. Linkages with other core areas need to be established, providing sufficient habitat components so the linkages, or corridors, are functional for genetic interchange purposes. Both core areas and linkages should be the focus of the watershed rehabilitation and recovery discussed above (such as road removal). Buffer zones around core areas should also be recognized in their contribution to habitat needs for these wildlife species.

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

Because the FS does not consider the best available science and for the reasons stated herein, the FS is unable to demonstrate it is managing consistent with NFMA, the Forest Plan and the Endangered Species Act. The inadequacy of cumulative effects analysis violates NEPA.

Kosterman, 2014, Vanbianchi et al., 2017 and Holbrook, et al., 2018 each demonstrate that the Lynx Amendment standards are not adequate for lynx viability and recovery, as the FS assumes.

Squires et al. (2013) noted that long-term population recovery of lynx, as well as other species as the grizzly bear, require maintenance of short and long-distance connectivity. The importance of maintaining lynx linkage zones for landscape connectivity should be maintained to allow for movement and dispersal of lynx. Lynx avoid forest openings at small scales, however effects on connectivity from project-created or cumulative openings were not analyzed in terms of this smaller landscape scale. And connectivity between project area LAUs and adjacent LAUs was not analyzed or disclosed.

Remedy: Choose the No Action Alternative or consult with the FWS and update the NRLMD to reflect the best available science.

We wrote in our comments:

Fisher

The Soldier-Butler EA fails to adequately analyze the cumulative effects on fisher due to trapping or from use of the road and trail networks. Heinemeyer and Jones, 1994 stated:

Fishers are susceptible to trapping, and are frequently caught in sets for other furbearers. Additionally, populations are vulnerable to trapping, as even light pressure

may cause local extinction. Western fisher populations may have lower natality and higher natural mortality rates as compared to eastern populations. Consequently, western populations may be more susceptible to over-trapping. It has been suggested that incidental captures may limit population growth in some areas.

Also Jones, (undated) recognizes:

Roads are directly correlated with trapper access, and consequently, fisher vulnerability. Even in areas where fishers cannot be legally trapped, trapping pressure for other furbearers (i.e., marten) may contribute significantly to fisher mortality. Roads bisecting or adjacent to preferred habitats (i.e., drainage bottoms) have the greatest potential of increasing a trapper's probability of encountering fishers."

And Witmer et al., 1998 state, "The range and population levels of the fisher have declined substantially in the past century, primarily the result of trapping pressure and habitat alteration through logging (Powell and Zielinski 1994)."

Hayes and Lewis, 2006 state "The two most significant causes of the fisher's decline were over-trapping by commercial trappers and loss and fragmentation of low to mid-elevation late-successional forests." Hayes and Lewis, 2006 also present a science synthesis in the context of a recovery plan for fisher in the state of Washington. They also state:

Trapping reduced populations quickly. Despite decades of protection from harvest, fisher populations never recovered in Washington. Fishers use forest structures associated with late-successional forests, such as large live trees, snags and logs, for giving birth and raising their young, as well as for rest sites. Travel among den sites, rest sites, and foraging areas occurs under a dense forest canopy; large openings in the forest are avoided. Commercial forestry removed the large trees, snags and logs that were important habitat features for fishers, and short harvest rotations (40-60 years) didn't allow for the replacement of these large tree structures. Clearcuts fragmented remaining fisher habitat and created impediments to dispersal, thus isolating fishers into smaller populations that increased their risk of extinction.

The analysis for the fisher, as for most wildlife, doesn't disclose the direct, indirect or cumulative impacts on important habitat components, such as snags, logs, foraging habitat configuration, connectivity, cover, prey species impacts, etc.

Research suggest that fishers are heavily associated with older forests throughout the year. (Aubry et al. 2013, Olsen et al. 2014, Raley et al. 2012, Sauder 2014, Sauder and Rachlow 2014, Schwartz et al. 2013, Weir and Corbould 2010.)

Sauder, 2014 found that “fishers selected landscapes for home ranges with larger, more contiguous patches of mature forest arranged in connected, complex shapes with

few isolated patches and open areas comprising < 5% of the landscape” (Sauder and Rachlow 2014).

Most studies have found that fishers are reluctant to stray from forest cover and that they prefer more mesic forests (Buskirk and Powell 1994, Olson et al. 2014, Schwartz et al. 2013, Sauder 2014, Sauder and Rachlow 2014, Weir and Corbould 2010). Both Sauder and Rachlow (2014) and Weir and Corbould (2010) predicted the influence of openings on fisher habitat occupancy based on their data. For example, Weir and Corbould predicted that a 5% increase in forest openings would decrease the likelihood of fisher occupancy by 50%. Sauder and Rachlow (2014) suggested that an “increase of open area from 5% to 10% reduces the probability of occupation by fishers by 39%. Sauder and Rachlow (2014) reported that the median amount of open area within fisher home ranges was 5.4%. This was consistent with “results from California where fisher home ranges, on average, contained <5.0% open areas” (Raley et al. 2012).

Sauder and Rachlow (2014) report the average home range size is approximately 12,200 acres and for a female fisher and approximately 24,300 acres for a male fisher. Home ranges generally do not overlap greatly for the individual sexes (21.3% for females and 15.3% for males), but male home ranges can overlap female home ranges. Preferred habitat would likely occur in upland areas and stands composed of cedar and grand fir forests (Schwartz et al. 2013).

From Ruggiero et al. 1994b:

(T)he fisher is unique to North America and is valued by native and nonnative people as an important member of the complex natural communities that comprise the continent's northern forests. Fishers are an important component of the diversity of organisms found in North America, and the mere knowledge of the fisher's existence in natural forest communities is valued by many Americans.

Ruggiero et al. 1994b discuss habitat disruption by human presence:

...The fisher's reaction to humans in all of these interactions is usually one of avoidance. Even though mustelids appear to be curious by nature and in some instances fishers may associate with humans (W. Zielinski, pers. obs.), they seldom linger when they become aware of the immediate presence of a human. In this regard, fishers generally are more common where the density of humans is low and human disturbance is reduced. Although perhaps not as associated with "wilderness" as the wolverine (V. Banci, Chapter 5), the fisher is usually characterized as a species that avoids humans (Douglas and Strickland 1987; Powell 1993).

The Soldier-Butler EA doesn't disclose the FS's strategy and best available science for insuring viable populations of the fisher, including limiting human access and therefore trapping. The EA cites no scientifically-based analysis on the spatial and structural requirements for fisher survival and successful reproduction. There is no sound,

scientifically-based analysis for the Forest Plan or entire Forest comparing forestwide conditions with habitat metrics required to insure fisher viability. The analyses for other wildlife show these same flaws.

The Forest Service responded:

FS Response: Wildlife Report pp. 104 – 105 discuss the current and historic status of fisher in the Nine Mile area. Fisher have been and continue to be very rare in the area and are not considered regular inhabitants of the project area (Wildlife Report p. 107). The scarcity of fisher in the project area is not surprising because the project area contains minimal habitat for fisher due to paucity of lower elevation cedar and grand fir forests (Wildlife Report p. 108). For this reason it is disclosed that the project area does not likely contribute to sustained fisher presence in the Northern Rockies (Wildlife Report p. 108).

The project and DDN are in violation of NFMA, NEPA and the APA. The range and population levels of the fisher have declined substantially in the past century, primarily the result of trapping pressure and habitat alteration through logging. The reason few fisher can be found in the project area is because of trapping and past logging has destroyed the habitat for fisher.

Remedy: Write an EIS that fully complies with the law or choose the No Action alternative.

We wrote in our comments:

Elk and other Big game

The EA does not present an adequate quantitative or qualitative analysis of security and thermal cover. The combined effects of the proposed “treatments” and forest plan amendments is not adequately analyzed and disclosed.

The effect of project activities including proposed forest plan amendment would adversely affect the MIS elk. The EA fails to justify the claims of overall net ecological benefit (“for the sake of accomplishing fuels reduction”) that are alleged by exceeding standards.

The EA does not provide an analysis of the degree to which project activities will have the effect of displacing elk and other ungulates onto private land, and the indirect effects on values on those private lands.

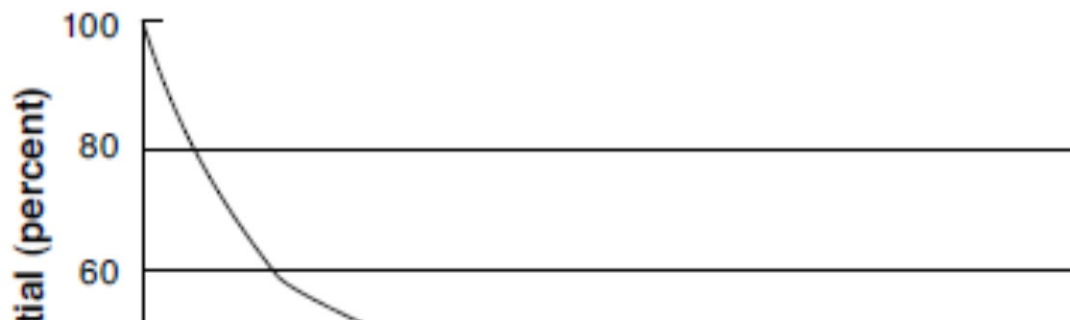
The EA claims, “past experience has shown that it is unlikely that work would be occurring in multiple drainages at the same time further providing dispersal areas.” Then why doesn’t the EA include this in project design specifications?

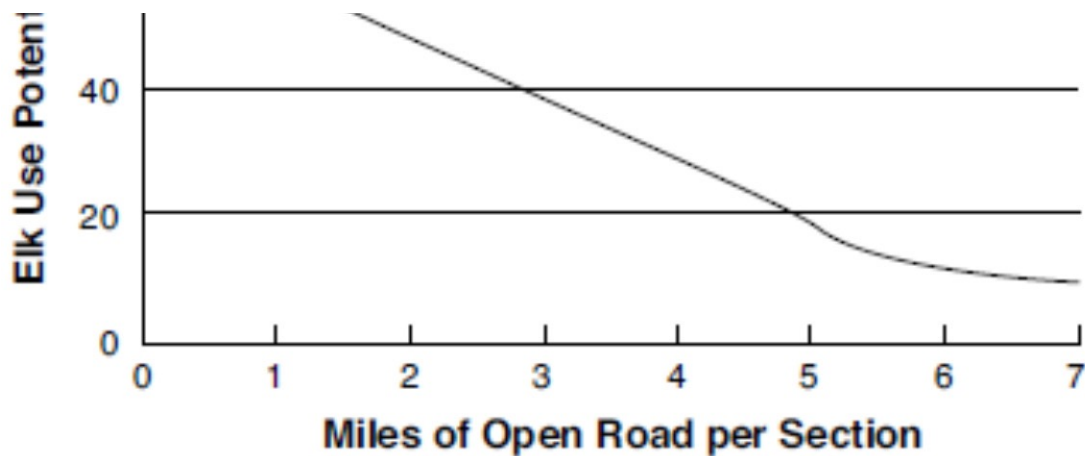
The science is clear that motorized access via trail, road, or oversnow adversely impact habitat for the elk. Servheen, et al., 1997 indicate that motorized trails increase elk vulnerability and reduce habitat effectiveness, and provide scientific management recommendations.

Christensen, et al. (1993) is a Region One publication on elk habitat effectiveness. Meeting a minimum of 70% translates to about 0.75 miles/sq. mi. in key elk habitat, as shown in their graph:

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

5. Levels of habitat effectiveness:





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

harvest, mining, human wildfire ignitions, invasive species introduction and spread, etc.) with direct road impacts. Multiple, convergent lines of empirical evidence summarized herein support two robust conclusions: 1) no truly “safe” threshold road density exists, but rather negative impacts begin to accrue and be expressed with incursion of the very first road segment; and 2) highly significant impacts (e.g., threat of extirpation of sensitive species) are already apparent at road densities on the order of 0.6 km per square km (1 mile per square mile) or less. Therefore, restoration strategies prioritized to reduce road densities in areas of high aquatic resource value from low-to- moderately-low levels to zero-to-low densities (e.g., <1 mile per square mile, lower if attainable) are likely to be most efficient and effective in terms of both economic cost and ecological benefit. By strong inference from these empirical studies of systems and species sensitive to humans’ environmental impact, with limited exceptions, investments that only reduce high road density to moderate road density are unlikely to produce any but small incremental improvements in abundance, and will not result in robust populations of sensitive species.

The Forest Service responded:

FS Response: Refer to Wildlife Report p. 35 for discussion on MIS. The report makes it clear that elk are a challenging species to use as an MIS due to impacts from hunting, disease, highway mortality, private land management, and other factors outside of the Forest’s influ-

ence. It is important to note here that the MIS designation was made in 1986 and much has changed in regard to big game populations in western Montana since that time. In many of the hunting districts in MTFWP Region 2, elk are currently at or above management objectives. This is true for Hunting District 201 which overlaps the project area (Wildlife Report p. 36). Pressing and challenging issues at this time in R2 include the increasing use of private lands by elk and how to attract/retain elk on public lands – see Wildlife Report pp. 36 – 37. As stated, on p. 37, the reasons for increased use of public lands is not well understood. One factor not mentioned in the Wildlife Report is increased human tolerance of elk on private lands where year-round food and security is available. It is widely known that once elk habituate to these conditions it is difficult, even with increased hunting pressure, to change these patterns.

Much to its credit, wildlife biologists with Montana's Department of Fish, Wildlife and Parks were so concerned that they wrote the Forest Service during the travel planning process for the Blackfoot area that "although elk populations have generally increased in hunting districts that include Helena National Forest land since adoption of the 1986 Forest Plan, the number of elk that spend summer and fall on the Lincoln Ranger District have not. The same applies on the Lolo National Forest. 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 Lincoln valley have increased despite the near elimination of antlerless harvest opportunity and the adoption of spike-bull harvest restrictions.”The project is in violation of the Lolo Forest Plan, NFMA, NEPA and the APA.

Montana’s big-game management agency also warned that due to degraded habitat on public lands, elk are now spending more time on private lands, which causes conflict with land owners as well as increasing the difficulty of managing the herd size due to loss of hunting opportunities on public lands, writing: “The number of elk that spend the majority of the year on some nearby private lands has increased dramatically between 1986 and 2013. FWP has consistently urged the Forest Service to increase functional fall habitat security on the Lolo National Forest.

Remedy: Write an EIS for the project that fully complies with the law or choose the No Action alternative.

We wrote in our comments starting on page 52:

Pine Marten

The Forest Plan recognizes that the pine marten is one of the species which “represent wildlife dependent on old growth.”

The Soldier-Butler does not consider best available science for insuring viable populations of the pine marten, a

species whose habitat is significantly altered by thinning and other active forest management. (See Moriarty et al., 2016; Bull and Blumton, 1999; Hargis et al., 1999 and Wasserman et al., 2012).

The EA fails to conduct an analysis of the historic range of marten habitat on the Forest, thus it also fails to conduct the proper cumulative effects analysis.

Moriarty et al., 2016 found that the odds of detecting a marten was 1,200 times less likely in openings and almost 100 times less likely in areas treated to reduce fuels, compared to structurally-complex forest stands.

Ruggiero et al. 1994b recognize that for martens, “trapper access is decreased, and de facto partial protection provided, by prohibitions of motorized travel.”

Old growth allows martens to avoid predators, provides resting and denning places in coarse woody debris and large diameter trees, and allows for access under the snow surface. USDA Forest Service, 1990 reviewed research suggesting that martens prefer forest stands with greater than 40% tree canopy closure and rarely venture more than 150 feet from forest cover, particularly in winter. USDA Forest Service, 1990 also cites research suggesting that at least.

50% of female marten home range should be maintained in mature or old growth forest. Also, consideration of habitat connectivity is essential to ensuring marten viability: “To ensure that a viable population of marten is maintained across its range, suitable habitat for individ-

ual martens should be distributed geographically in a manner that allows interchange of individuals between habitat patches (Ibid.).

Ruggiero et al. 1994b recognize that for martens, “trapper access is decreased, and de facto partial protection provided, by prohibitions of motorized travel.”

The Soldier-Butler EA does not disclose the quantity and quality of habitat necessary to sustain the viability of the marten.

Pileated Woodpecker

The Soldier-Butler EA indicates the proposed logging would remove forest habitat components which provides habitat for species needing the kind of habitat features found in mature and old-growth forests, such as the pileated woodpecker.

(S)hort-term viability of pileated woodpeckers across the Region is not an issue, according to the FS’s Samson, 2005. That was fourteen years ago. Why doesn’t the EA disclose Samson’s conclusions for the longer term, for any wildlife species?

The Soldier-Butler EA doesn’t disclose the FS’s strategy and best available science for insuring viable populations of the pileated woodpecker. Bull et al. 2007 represents over 30 years of investigation into the effects of logging on the pileated woodpecker and is recent research information on such effects, and contrast the effects of natural disturbance with large-scale logging on Pileated Wood-

peckers. Also see Bull et al., 1992, Bull and Holthausen, 1993, and Bull et al., 1997 for biology of pileated woodpeckers and the habitats they share with cavity nesting wildlife.

The Idaho Panhandle NF's original Forest Plan old-growth standards (USDA Forest Service, 1987c) were largely built around the habitat needs of its indicator species, the pileated woodpecker. Bull and Holthausen 1993, provide field tested management guidelines. They recommend that approximately 25% of the home range be old growth and 50% be mature forest.

USDA Forest Service, 1990 indicates measurements of the following variables are necessary to determine quality and suitability of pileated woodpecker habitat:

- *Canopy cover in nesting stands*
- *Canopy cover in feeding stands*
- *Number of potential nesting trees >20" dbh per acre*
- *Number of potential nesting trees >30" dbh per acre*
- *Average DBH of potential nest trees larger than 20" dbh*

- *Number of potential feeding sites per acre*
- *Average diameter of potential feeding sites*
USDA Forest Service, 1990 states, "To provide suitable pileated woodpecker habitat, strips should be at least 300 feet in width..."

This preferred diameter of nesting trees for the pileated woodpecker is notable. McClelland and McClelland (1999) found similar results in their study in northwest Montana, with the average nest tree being 73 cm. (almost 29") dbh. The pileated woodpecker's strong preference for trees of rather large diameter is not adequately considered in the Forest Plan. The FS provides absolutely no commitments for leaving specific numbers and sizes of largest trees favored by so many wildlife species.

B.R. McClelland extensively studied pileated woodpecker habitat needs. McClelland, 1985 states:

Co-workers and I now have a record of more than 90 active pileated woodpecker nests and roosts, ...the mean dbh of these trees is 30 inches... A few nests are in trees 20 inches or even smaller, but the minimum cannot be considered suitable in the long-term. Our only 2 samples of pileateds nesting in trees <20 inches dbh ended in nest failure... At the current time there are many 20 inch or smaller larch, yet few pileateds selected them. Pileateds select old/old growth because old/old growth provides habitat with a higher probability of successful nesting and

long term survival. They are “programmed” to make that choice after centuries of evolving with old growth.

McClelland (1977), states:

(The Pileated Woodpecker) is the most sensitive hole nester since it requires old growth larch, ponderosa pine, or black cottonwood for successful nesting. The Pileated can be considered as key to the welfare of most hole-nesting species. If suitable habitat for its perpetuation is provided, most other hole-nesting species will be accommodated.

Pileated Woodpeckers use nest trees with the largest dbh: mean 32.5 inches; Pileated Woodpeckers use the tallest nest trees: mean 94.6 feet;

*The nest tree search image of the Pileated Woodpecker is a western larch, ponderosa pine, or black cottonwood snag with a broken top (status 2), greater than 24 inches dbh, taller than 60 feet (usually much taller), with bark missing on at least the upper half of the snag, heartwood substantially affected by *Fomes laracis* or *Fomes pini* decay, and within an old-growth stand with a basal area of at least 100 sq feet/acre, composed of large dbh classes.*

A cluster analysis based on a nine-dimensional ordination of nest tree traits and habitat traits revealed close association between Yellow-bellied Sapsuckers, Mountain Chickadees, and Red-breasted Nuthatches. These three species plus the Pileated Woodpecker and Hairy Woodpecker are relatively grouped by coincident occurrence in old growth. Tree Swallows, Black-capped Chickadees, and Common

Flickers are separated from the above five species by their preference for more open areas and their frequent use of small dbh nest trees.

(Most) species found optimum nesting habitat in stands with a major component of old growth, particularly larch. Mean basal area for pileated woodpecker nest sites was 150 square feet per acre. (McClelland. B.R. and others, 1979)

Many large snags are being cut for firewood. Forest managers should limit firewood cutting to snags less than 15 inches in d.b.h. and discourage use of larch, ponderosa pine, and black cottonwood. Closure of logging roads may be necessary to save high-value snags. Logging slash can be made available for wood gathers.

“Follow Lolo NF Guidance for Snags and Coarse Woody Debris (Lolo NF 1997 and 2006).” What is the scientific basis the FS relied upon for this direction for managing snags and large down wood?

Were those standards based the range of historical conditions on the Lolo NF?

Recent scientific research reveals need to upgrade snag standards and other programmatic direction. For one example, Lorenz et al., 2015 state:

Our findings suggest that higher densities of snags and other nest substrates should be provided for PCEs (primary cavity excavators) than generally recommended, because past research studies likely overestimated the abun-

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

This means only the primary cavity excavators themselves, such as the pileated woodpecker, have the ability to decide if a tree is suitable for excavating. This also means managers know little about how many snags per acre are needed to sustain populations of cavity nesting species. Lorenz et al., 2015 must be considered best available science to replace inadequate forest plan snag retention guidelines.

The FS's Vizcarra, 2017 notes that researchers “see the critical role that mixed-severity fires play in providing enough snags for cavity-dependent species. Low-severity prescribed fires often do not kill trees and create snags for the birds.”

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

Spiering and Knight (2005) examined the relationship between cavity-nesting birds and snag density in managed

ponderosa pine stands and examined if cavity-nesting bird use of snags as nest sites was related to the following snag characteristics (DBH, snag height, state of decay, percent bark cover, and the presence of broken top), and if evidence of foraging on snags was related to the following snag characteristics: tree species, DBH, and state of decay. These authors state:

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

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

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

Percent bark cover had little influence on the presence of a cavity. Therefore, larger and taller snags that are not

heavily decayed are the most likely locations for cavity-nesting birds to excavate cavities.

The association of larger DBH and greater height of snags with cavities is consistent with other studies (Scott, 1978; Cunningham et al., 1980; Mannan et al., 1980; Raphael and White, 1984; Reynolds et al., 1985; Zarnowitz and Manuwal, 1985; Schreiber and deCalesta, 1992).

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

The Soldier-Butler EA fails to quantify the cumulative snag loss in previously logged areas or subject to other management-caused snag loss such as road accessed firewood cutting.

Bate et al. (2007), found that snag numbers were lower adjacent to roads due to removal for safety considerations, removal as firewood, and other management activities. Other literature has also indicated the potential for reduced snag abundance along roads (Wisdom et al. 2000).

The Soldier-Butler EA fails to quantify snag loss would be expected because of safety concerns which vary with different methods of log removal.

The Soldier-Butler EA does not cite any science to support its assumption that the FS management will result in snags and down logs in abundance to continuously support viable populations. No monitoring is cited to support claims of benefits to snag and down log- dependent species' population numbers or distribution.

No estimates of snags for the project area state how statistically robust the project area surveys are for making accurate estimates and analyses.

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

The Soldier-Butler EA fails to apply the best available science to describe the quantity and quality of habitat that is necessary to sustain the viability of the pileated woodpecker.

The Soldier-Butler EA doesn't disclose the FS's strategy and best available science for insuring viable populations of the northern goshawk, a species whose habitat is adversely affected by logging and other forest management.

Northern Goshawk

There is no indication the FS has sufficiently surveyed for goshawk nest stands in the project area. The FS must utilize goshawk survey methodology consistent with the best available science. For example the recent and comprehensive protocol, “Northern Goshawk Inventory and Monitoring Technical Guide” by Woodbridge and Hargis 2006. Also, USDA Forest Service 2000b state:

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

Scientific information indicates analysis must be conducted for adverse impacts in a roughly 6,000-acre northern goshawk home range or the post-fledging area (PFA). Reynolds et al. 1992 goshawk guidelines recommend ratios of (20%/20%/20%) each in the mid-aged forest, mature forest, and old forest Vegetative Structural Stage

(VSS) classes for PFAs and foraging areas. Reynolds et al. 1992 calls for 100% in VSS classes 5 & 6 and 0% in VSS classes 1-4 in nest areas.

In addition, Reynolds et al. 1992 recommend logged openings of no more than 2 acres in size or less in the PFAs, depending on forest type, and logged openings of no more than 1-4 acres or less in size in the foraging areas, depending on forest type. Clough (2000) noted that in the absence of long-term monitoring data, a very conservative approach to allowing logging activities near active goshawk nest stands should be taken to ensure that goshawk distribution is not greatly altered. This indicates that the full 180-acre nest area management scheme recommended by Reynolds et al. (1992) should be used around any active goshawk nest. Removal of any large trees in the 180-acre nesting area would contradict the Reynolds et al. (1992) guidelines.

Crocker-Bedford (1990) noted:

After partial harvesting over extensive locales around nest buffers, reoccupancy decreased by an estimated 90% and nestling production decreased by an estimated 97%. Decreases were probably due to increased competition from open-forest raptors, as well as changes in hunting habitat and prey abundance.

Moser and Garton (2009) reported that all goshawk nests examined in their study area were found in stands whose average diameter of overstory trees was over 12.2 inches and all nest stands had > 70% overstory tree canopy. They

described their findings as being similar to those described by Hayward and Escano (1989), who reported that nesting habitat “may be described as mature to overmature conifer forest with a closed canopy (75-85% cover)....”

The Forest Plan and FEIS, and the Soldier-Butler EA fail to describe the quantity and quality of habitat necessary to sustain the viability of the northern goshawk.

Black-Backed Woodpecker (Sensitive)

The viability of black-backed woodpeckers is threatened by fire suppression and other “forest health” policies which specifically attempt to prevent its habitat from developing. “Insect infestations and recent wildfire provide key nesting and foraging habitats” for the black-backed woodpecker and “populations are eruptive in response to these occurrences” (Wisdom et al. 2000). A basic purpose of the FS’s management strategies is to negate the natural processes that the black-backed woodpecker biologically relies on; the emphasis in reducing the risk of stand loss due to stand density coupled with the increased risk of stand replacement fire events. Viability of a species cannot be assured, if habitat suppression is a forestwide policy.

The significance of project effects (including risk to viability) cannot be determined in the absence of a forestwide cumulative effects analysis of the FS’s fire suppression policies.

Please see Hanson Declaration, 2016 for an explanation of what a cumulative impact is with regard to the backed woodpecker, how the FS failed apply the best available science in their analysis of impacts to Black-backed Woodpeckers for a timber sale, why FS's (including Samson, 2006) reports are inaccurate and outdated, and why FS's reliance on them results in an improper minimization of adverse effects and cumulative impacts to black-backed woodpeckers with regard to the agency's population viability assessment.

Hutto, 1995 states: "Fires are clearly beneficial to numerous bird species, and are apparently necessary for some." (p. 1052, emphasis added.) Hutto, 1995 whose study keyed on forests burned in the 1988 season, noted:

Contrary to what one might expect to find immediately after a major disturbance event, I detected a large number of species in forests that had undergone stand-replacement fires. Huff et al. (1985) also noted that the density and diversity of bird species in one- to two- year-old burned forests in the Olympic Mountains, Washington, were as great as adjacent old-growth forests...

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

USDA Forest Service 2011c states:

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

Also see the agency's Fire Science Brief, 2009, which states, "Hutto found that Black-backed Woodpeckers fared best on sites unharvested before fire and poorest in the heavily harvested sites", raising a concern about logging for forest restoration that is not addressed in the Soldier- Butler EA: How does pre-fire logging affect the future suitability of these forests to post- disturbance specialists?

Hutto, 2008 states, "severely burned forest conditions have probably occurred naturally across a broad range of forest types for millennia. These findings highlight the fact that severe fire provides an important ecological

backdrop for fire specialists like the black-backed woodpecker, and that the presence and importance of severe fire may be much broader than commonly appreciated.”

Cherry (1997) states:

The black-backed woodpecker appears to fill a niche that describes everything that foresters and fire fighters have attempted to eradicate. For about the last 50 years, disease and fire have been considered enemies of the ‘healthy’ forest and have been combated relatively successfully. We have recently (within the last 0 to 15 years) realized that disease and fire have their place on the landscape, but the landscape is badly out of balance with the fire suppression and insect and disease reduction activities (i.e. salvage logging) of the last 50 years. Therefore, the black-backed woodpecker is likely not to be abundant as it once was, and continued fire suppression and insect eradication is likely to cause further decline. (Emphasis added.)

The FS continues to manage against severely burned forests, as evident from the Soldier-Butler EA’s Purpose and Need.

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

Woodpeckers play critical roles in the forest ecosystem. Woodpeckers are primary cavity nesters that excavate at least one cavity per year, thus making these sites available to secondary cavity nesters (which include many species

of both birds and mammals). Black-backed and three-toed woodpeckers can play a large role in potential insect control. The functional roles of these two woodpecker species could easily place them in the 'keystone' species category—a species on which other species depend for their existence.

Wickman (1965) calculated that woodpeckers may eat up to 50 larvae per day that were each about 50 mm in length. The predation on these larvae is significant. It has been estimated that individual three-toed woodpeckers may consume thousands of beetle larvae per day, and insect outbreaks may attract a many-fold increase in woodpecker densities (Steeger et al. 1996). The ability of woodpeckers in to help control insect outbreaks may have previously been underestimated.

Cherry (1997) also notes:

Black-backed woodpeckers preferred foraging in trees of 34 cm (16.5 in) diameters breast height and (63 ft) 19 m height (Bull et al. 1986). Goggans et al. (1987) found the mean dbh of trees used for foraging was 37.5 cm (15 in) and the mean dbh of trees in the lodgepole pine stands used for foraging was 35 cm (14 in). Steeger et al. (1996) found that both (black-backed and three-toed) woodpecker species fed in trees from 20-50 cm (8-20 in) dbh.

Black-backed woodpeckers excavate their own cavities in trees for nesting. Therefore, they are referred to as primary cavity nesters, and they play a critical role in excavating cavities that are later used by many other species of birds and mammals that do not excavate their own cavity

(secondary cavity nesters). Black-backed woodpeckers peel bark away from the entrance hole and excavate a new cavity every year. Other woodpeckers sometimes take over their cavities (Goggans et al. 1987).

Also, FS biologists Goggans et al., 1989 studied black-backed woodpecker use of unburned stands in the Deschutes NF in Oregon. They discovered that the black-backed woodpeckers used unlogged forests more than cut stands. In other words, effects to the black-backed woodpecker accrue from logging forest habitat that has not been recently burned.

FS biologists Hillis et al., 2002 note that “In northern Idaho, where burns have been largely absent for the last 60 years, black-backed woodpeckers are found amid bark beetle outbreaks, although not at the densities found in post-burn conditions in Montana.” Those researchers also state, “The greatest concerns for this species, however, are decades of successful fire suppression and salvage logging targeted at recent bark beetle outbreaks.” Hillis et al., 2002 also state:

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

Dulisse in press, Bull et al. 1986, Goggans et al. 1987, Vil-lard 1994, Hoffman 1997, Weinhausen 1998).

Bond et al., 2012a explain the need for a conservation strategy for the black-backed woodpecker: In California, the Black-backed Woodpecker's strong association with recently burned forest, a habitat that is ephemeral, spatially restricted, and often greatly modified by post-fire logging, as well as the species' relative rarity, may make the woodpecker vulnerable to declines in the state. Additionally, Black-backed Woodpeckers in California are affected by the management of unburned forests – both because pre-fire stand conditions affect the suitability of post-fire habitat for the species, and because a substantial proportion of California's Black-backed Woodpeckers nest and forage at a low population density in unburned forests. Conserving the Black-backed Woodpecker in California likely requires appropriate management and stewardship of the habitat where this species reaches its highest density – recently burned forest – as well as appropriate management of 'green' forests that have not burned recently.

The viability of black-backed woodpeckers is threatened by the FS's fire suppression and other "forest health" policies, which specifically attempt to prevent its habitat from developing. "Insect infestations and recent wildfire provide key nesting and foraging habitats" for the black-backed woodpecker and "populations are eruptive in response to these occurrences" (Wisdom et al. 2000). A basic purpose of the Soldier-Butler project is to negate the

natural occurrence that the black-backed woodpecker biologically relies on; the emphasis in reducing the risk of stand loss due to stand density coupled with the increased risk of stand replacement fire events. This emphasis also occurs on a large portion of the Lolo NF. Viability of a species cannot be assured, if habitat suppression is a forestwide policy.

The Soldier-Butler EA does not disclose the quantity and quality of habitat necessary to sustain the viability of the black-backed woodpecker.

Flammulated owl (Sensitive)

The Soldier-Butler EA does not disclose the quantity and quality of habitat necessary to sustain the viability of the flammulated owl.

The Forest Service responded to see the wildlife report and there are enough snags.

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

Remedy: Choose the NO Action Alternative or write an EIS that fully complies with the law.

We wrote in our comments:

Water quality and fisheries

The Soldier-Butler EA does not demonstrate consistency with forest plan direction for the MIS cutthroat trout, which is also a Sensitive species. Among standards the EA

ignores are Standard 27 as discussed above, and Standard 28 which states:

Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress. (A long-term stress is defined as a downward trend of indicators such as aquatic insect density or diversity, fish populations, intragravel sediment accumulations, or channel structure changes that continue for more than 1 hydrologic year as determined by procedures outlined in the Forest Plan Monitoring Requirements.) Project level assessments will address the potential impacts of management activities on off-Forest aquatic resources by considering and evaluating downstream data wherever available.

The EA contains no analysis of “indicators such as aquatic insect density or diversity, fish populations, intragravel sediment accumulations, or channel structure changes that continue for more than 1 hydrologic year.” The Forest Plan states, “The indicator species will be monitored because they are sensitive to management activities or are of special concern, such as the ...westslope cutthroat trout.”

The EA has no quantitative sediment analysis. It does not provide itemized numerical estimates of project-induced sediment increases, nor of decreases due to specific mitigation or restoration actions. The analysis is opaque and not credible without a breakdown of the numbers.

The EA fails to support its claims of net improvement in long-term sediment amounts in streams. It lacks statistical rigor and scientific integrity.

The EA does not analyze and disclose project consistency with the existing TMDLs.

The EA does not explain how the “Ninemile Watershed Restoration Plan” is being implemented.

The EA states, “As an overall summary, the streams and riparian areas are generally in an upward trend of recovery from past disturbances caused by many activities including historic

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riparian harvest, instream wood removal, grazing, road construction, and mining.” Please cite all of the sources of data supporting this “upward trend” assertion.

The EA mentions a “second beneficial watershed proposal is replacing an undersized culvert on FS Rd# 890 where it crosses the upper part of Josephine Creek. ... This work would not be accomplished using funds generated by the project but would be implemented when adequate funding was secured.” Please disclose a comprehensive list of past authorized restoration actions—in addition to the road decommissioning from Frenchtown Face—which have yet to be implemented in the Project Area because of lack of funding or whatever.

How many undersize culverts or other stream/road crossing problem sites in the Project Area would not be funded by a Decision, or otherwise not considered necessary “offset” activities.

The EA states, “The current conditions define the baseline sediment condition for which both action alternatives are compared.” This is a false baseline; without comparing pre-management conditions to this false baseline, the cumulative impacts of past and ongoing management cannot be understood.

The EA doesn’t disclose the effect that management-caused openings in forest canopy cause increased water temperatures in streams. It assumes RHCAs are 100% of the protection.

Riggers, et al. 2001 state:

(T)he real risk to fisheries is not the direct effects of fire itself, but rather the existing condition of our watersheds, fish communities, and stream networks, and the impacts we impart as a result of fighting fires. Therefore, attempting to reduce fire risk as a way to reduce risks to native fish populations is really subverting the issue. If we are sincere about wanting to reduce risks to fisheries associated with future fires, we ought to be removing barriers, reducing road densities, reducing exotic fish populations, and re-assessing how we fight fires. At the same time, we should recognize the vital role that fires play in stream systems, and attempt to get to a point where we can let fire play a more natural role in these ecosystems.

Those FS biologists emphasize, “the importance of wild-fire, including large-scale, intense wildfire, in creating and maintaining stream systems and stream habitat. ... (I)n most cases, proposed projects that involve large-scale thinning, construction of large fuel breaks, or salvage logging as tools to reduce fuel loading with the intent of reducing negative effects to watersheds and the aquatic system are largely unsubstantiated.”

The EA fails to include any analysis of the trends toward attainment of Riparian Management Objectives, especially of those not currently being met.

The EA states, “bull trout... were historically present in the Ninemile watershed” however the EA doesn’t disclose any genuine effort to restore this bull trout population, or explain how project activities will not retard recovery. If this is consistent with the Forest Plan, then the plan is broken.

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Population numbers and trends of native aquatic species are not disclosed in the EA.

The Forest Service responded:

Fisheries Report Section 5.2 ‘Biological Evaluation and Biological Assessment’ contains a viability assessment for westslope cutthroat trout where risk to local and region populations is considered low. Section 2.4 ‘Effects Thresholds’ details how Forest Plan Standards 27 and 28 are incorporated into the fisheries analysis.

While the Forest Service, as a Federal agency, is charged with recovering Threatened and Endangered species, the Endangered Species Act does not mandate that Forests do so on all projects at all scales.

The Forest Service has to follow the ESA just like everybody else. The Forest Service's duty under the ESA is to recover threatened species.

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

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 threat-

ened 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 tempera-

ture, 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.”

The Forest Service must formally consult with the USFWS on the affect of the project on bull trout and get a take permit.

This project does not recover bull trout. It is an extinction project, not a project that will contribute to bull trout recovery.

Please see the attached comments by Christopher A.

Frissell, Ph.D on The 2014 Draft Recovery Plan. He said the recovery plan for bull trout for bull trout implies (and in a backhanded way specifies) that the USFWS assumes there is flexibility to make management choices deliberately allowing some core area populations of bull trout to go into decline or extinction, on the expectation others will appear from scratch, or disperse from severely depressed relict populations elsewhere in the Recovery

Unit to arise in new locations. However this Draft Plan, the previous listing and recovery planning record, and the published literature present virtually no evidence to substantiate that new populations of bull trout have established in contemporary times, either at the Core Area scale or the next smaller scale of breeding populations. In this regard bull trout are the biological polar opposite of

vagile species like wolves, which are demonstrated to be amenable to reintroduction and are proficient colonizers of new territory at the regional scale. On the other hand, we do have evidence that even small, so-called “relict” bull trout populations can rapidly reestablish migratory life histories, or expand extant spawning areas when changing habitat conditions allow it. But we do not know that they can establish new populations in previously unoccupied streams or watersheds under contemporary prevailing conditions. Hence from a scientific perspective, existing populations of bull trout, no matter how small and far-flung, must be viewed as the sole seed sources for future recovery.”

Remedy: Select the No Action alternative. Prepare a Supplemental EIS that addresses the analytical and scientific issues identified above and formally consult with the U.S. FWS on the impact of the project and the

Revised Forest Plan and the impact of LNF projects forest wide on bull trout.

We wrote in our comments:

Economics

The Soldier-Butler EA indicates that U.S. taxpayers are being asked to subsidize timber companies to the tune of around \$5,000,000. Yet because costs are not itemized, this is possibly an underestimate.

For each alternative, please disclose the itemized costs for each of the following: new system roads, new temporary roads (including machine trails and excavated skid trails), project-related road maintenance, road decommissioning, all other road-related work, NEPA and associated pre-decisional costs, sale preparation and administration, project-related weed treatment, prescribed fire application, other project mitigation, post-project monitoring, environmental analyses and reports, public meetings and field trips, publicity, consultation with other government agencies, responding to comments and objections, collaborative meetings.

The Soldier-Butler EA fails to account for fire suppression for which taxpayers are expected to foot the bill, without having any say in the matter.

The EA does not disclose project-related weed treatment costs, prescribed fire application costs, NEPA costs, costs of culvert replacement, meadow enhancement, etc.

Please identify the funding sources for all proposed non-commercial activities.

FS Response: The Project Economic Analysis Tool (Project File K2-3) located in the Project File discloses the project-related weed treatment costs, prescribed fire application costs, and costs of culvert replacement. Costs associated with NEPA are sunk costs at the time of decision and are not included in the PNV analysis as stated on p. 11 of the Economics Report.

NFMA and the Forest and Rangeland Renewable Resources Planning Act (RPA) require management of national forest system lands in a manner that "maximizes long term net public benefits" [36 CFR 219.1(a)]. The Forest Service's planning regulations have defined the term "net public benefits" as the "overall value of positive effects (benefits) less all associated inputs and negative effects (costs)." NFMA requires a sophisticated consideration of benefits and costs, including use of both market and non-market methods of determining existing and future resource values, methods to determine opportunity costs, and use of best available quantitative and qualitative techniques [(36 CFR 219.12(e); 219.12(f)2; 219.1(b)12)]. How will the Soldier-Butler project satisfy the monitoring requirements of the Forest Plan or NFMA?

In a May 1, 2003 report, GAO-03-503 Forest Service: Little Progress on Performance Accountability Likely Unless Management Addresses Key Challenges sent to Congress and the Honorable Scott McInnis, Chairman of the subcommittee on Forest Health, Barry Hill, Director of Natural Resources and Environment at the General Accounting Office, reported “the Forest Service has not been able to provide to Congress and the public with a clear understanding of what its 30,000 employees accomplish with the approximately \$5 billion it received every year.”

Please comply with 36 C.F.R. § 219.27 (a) (7) which requires the Forest Service prior to project implementation to access for potential physical, biological, aesthetic, cultural, engineering, and economic impacts and for consistency with multiple uses planned for the general area and 36 CFR 219.12 (3) which requires documentation of costs associated with carrying out the planned management prescriptions as compared with costs estimated in the forest plan.”

Remedy: Choose the No Action Alternative or write an EIS that analysis the full economic impact of the project.

We wrote I our comments:

“Unroaded lands

It is well established that logging in an uninventoried and inventoried roadless areas is an irreversible and irretrievable” commitment of resources that “could have serious

environmental consequences” Smith v. U.S. Forest Service, 33 F.3d 1072, 1078 (9th Cir. 1994). Please address the effects of logging and roading the uninventoried roadless areas on their characteristics vis-à-vis potential for future wilderness or inventoried roadless area designation. The discussion of the impacts on unroaded areas was superficial. There was no analysis of the project’s impact on the unique values of unroaded areas together with their adjacent inventoried roadless areas. The EIS should satisfy the “hard look” requirement with respect to the environmental impact of logging and roading uninventoried roadless areas.”

The Forest Service responded on page 248 of the EA:

“The Roadless/Visuals report considers the effects of the proposed action on the Wilderness Attributes and Roadless Characteristics within the Inventoried Roadless Areas the overlap the project area boundary. Please see this report for further details. In addition, both the Fuels and-Silvicultural specialist reports discuss the existing condition of the timber stands within the project area. The purpose and need of the project discusses why there is a need for action within the Soldier-Butler project area.”

The Forest Service also wrote on page 24 of the EA:

“Roadless Rule, 2001 Regional Foresters will review the following activities:

a) Any necessary timber cutting or removal or any road construction or road reconstruction in emergency situations involving wildfire suppression, search and rescue operations, or other imminent threats to public health and safety in inventoried roadless areas.

b) Timber cutting, sale, or removal in inventoried roadless areas incidental to the implementation of an existing special use authorization. Road construction or road reconstruction is not authorized through this re-delegation without further project specific review.

c) The cutting, sale, or removal of generally small diameter timber when needed for one of the following purposes:

1. To improve threatened, endangered, proposed, or sensitive species habitat;

2. To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period; or,

3. For the administrative and personal use, as provided for in 36 Code of Federal Regulations 223, where personal use includes activities such as Christmas tree and firewood cutting and where administrative use includes providing materials for activities such as construction of trails, footbridges, and fences.”

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

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

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

and S. 828:

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

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

Remedy: Choose the No Action Alternative or fully analyze as the law requires with an EIS the wilderness characteristics of the project area and if the proposed action would alter these wilderness characteristics.

We wrote in our comments:

“The Soldier-Butler EA does not disclose the degree to which the productivity of the land and soil has been affected in the project area and forestwide due to noxious weed infestations, and how that situation is expected to change in the coming years and decades. The forestwide noxious weed treatment program is mitigation for management activities which exacerbate the spread of noxious weeds. The EA fails to disclose the effectiveness of this mitigation. The Lolo NF’s Jam Cracker EA states: Any activity that exposes soil has the potential to accelerate weed spread. Factors limiting weed spread are shade from tree canopies, higher soil moisture, needle and grass litter that provides a mulch-like covering of the ground, lack of exposed soil, and native plant competition.

The Forest Service responded:

The cumulative effects related to weeds can be found in the Noxious Weeds Report.

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

Invasive plant species, also called noxious weeds, are one of the greatest modern threats to biodiversity on earth. Noxious weeds cause harm because they displace native plants, resulting in a loss of diversity and a change in the structure of a plant community. By removing native vegetative cover, invasive plants like knapweed may increase sediment yield and surface runoff in an ecosystem. As well knapweed may

alter organic matter distribution and nutrient through a greater ability to uptake phosphorus over some native species in grasslands. Weed colonization can alter fire behavior by increasing flammability: for example, cheatgrass, a widespread noxious weed on the Forest, cures early and leads to more frequent burning. Weed colonization can also deplete soil nutrients and change the physical structure of soils.

The Forest Service's own management activities are largely responsible for noxious weed infestations; in particular, logging, prescribed 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 because 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 often 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 grasslands and forest openings.

Prescribed burning activities within the analysis area would likely cumulatively contribute to increases to noxious weed

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

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

1, Category 2 and Category 3 weeds classified as noxious in the MONTANA COUNTY NOXIOUS WEED LIST. State-listed Category 2 noxious weed species yellow and orange hawkweeds are recently established (within the last 5 to 10 years) in Montana and are rapidly expanding in established areas. They can invade undisturbed areas where native plant communities are intact. These species can persist in shaded conditions and often grow underneath shrubs making eradication very difficult. Their stoloniferous (growing at the surface or below ground) habit can create dense mats that can persist and spread to densities of 3500 plants per square mile (Thomas and Dale 1975).

Please address the cumulative, direct and indirect 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, mining access routes, and private roads; removal of trees through commercial and pre-commercial logging and understory thinning; and prescribed burns. Please discuss what open, gated, and decommissioned 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.

Please show in the EIS a commitment to a long-term, consistent strategy of application is being proposed for each weed infested area within the proposed action area in violation of NEPA and NFMA. Please discuss what long term monitoring of weed populations is proposed.

When areas treated with herbicides are reseeded on national forest land, they are usually reseeded with exotic grasses, not native plant species. Please discuss what native plant restoration activities will be implemented in areas disturbed by the actions proposed in this project. Please discuss howl 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 uninfested areas is “the most critical component of a weed management program.” The Forest Service’s national management strategy for noxious weeds also recommends “develop[ing] and implement[ing] forest plan standards” and recognizes that the cheapest and most effective solution is prevention. Please discuss which units within the project area currently have no noxious weed populations within their boundaries or what minimum stan-

dards are in the Lolo National Forest Plan to address noxious weed infestations. Please include an alternative in the that includes land management standards that will prevent new weed infestations by addressing the causes of weed infestation. The failure to include preventive standards would violate NFMA because the Forest Service is not ensuring the protection of soils and native plant communities. Additionally, the omission of an alternative that includes preventive measures would violate NEPA because the Forest Service failed to consider a reasonable alternative.”

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

that eliminates units that have noxious weeds present on roads within units from fire management proposals.

The project is in violation of NFMA, NEPA, the ESA and the APA for failing to consider a reasonable alternative to prevent weeds and the Forest Service is not ensuring the protection of soils and native plant communities and lynx critical habitat.

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

We wrote in our comments:

Roadless and Roadless Expanse

The Soldier-Butler EA fails to provide an analysis addressing the roadless expanse, which includes all contiguous lands with a roadless character, regardless of FS designation. The FS's Northern Region explains the concept of "Roadless Expanse" in a document entitled "Our Approach to Roadless Area Analysis of Unroaded Lands Contiguous to Roadless Areas" (12/2/10).

In summary, this Forest Service paper is based on some judicial history regarding the Roadless Area Conservation Rule. It states, "projects on lands contiguous to roadless areas must analyze the environmental consequences, including irreversible and irretrievable commitment of resources on roadless area attributes, and the effects for potential designation as wilderness under the Wilderness Act of 1964.

This analysis must consider the effects to the entire roadless expanse; that is both the roadless area and the unroaded lands contiguous to the roadless area.” (Emphasis added.) The EA does not “consider the effects to the entire roadless expanse.” Areas appear to have been omitted from the Reservation Divide Inventoried Roadless Area with no discernable features that would exclude them from roadless/wilderness consideration.

The Forest Service responded:

FS Response: See the Inventoried Roadless Area Report, which includes an analysis of the proposed project’s effects on the roadless expanse. This report was posted on the Lolo NF’s www NEPA project website at the time the EA was released along with the other specialists’ reports.

The EA does not take a hard look at the project impacts on the Roadless Characteristics and Wilderness Attributes of the Roadless Expanse(s). The public must be able to understand if the project would cause irreversible and irretrievable impacts on the suitability of any Roadless Expanse for future consideration for Recommended Wilderness or for Wilderness designation under forest planning.

The analysis is inadequate and violates the roadless rule, NEPA, NFMA and the APA.

Remedy:

Choose the No Action Alternative or write an EIS that fully complies with the law.

CONCLUSION

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

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

Thank you for your attention to these concerns.

Sincerely yours,

Michael Garrity (Lead Objector)
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