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VIA EMAIL AND U.S. CERTIFIED MAIL 7018 0680 0001 5460 5180

August 28, 2018

Chris French
Objection Reviewing Office
USDA Forest Service
1400 Independence Avenue SW
EMC-LEP, Mailstop 1104
Washington, DC 20250
Email: objections-chief@fs.fed.us

RE: Objection Regarding the Revised Blue Mountain Forest Plans

Dear Mr. French,

Blue Mountains Biodiversity Project ("the Project") and Friends of the Clearwater ("Friends") (collectively "BMBP") formally submits this Objection, under 36 C.F.R. part 219, to the Draft Record of Decision and Final Environmental Impact Statement ("FEIS") for the Malheur, Umatilla, and Wallowa-Whitman National Forests Revised Land Management Plans (collectively the "Draft Decision"). The Forest Service official responsible for the Draft Decision is James M. Peña. The affected national forests are the Malheur, Umatilla, and Wallowa-Whitman National Forests.

The Project is a nonprofit environmental advocacy organization dedicated to the conservation of the natural ecosystems of the Pacific Northwest and the native flora and fauna they harbor. The Project and its members actively participate in governmental decision-making processes on public lands, including national forests, throughout Oregon.

Friends of the Clearwater's core mission area—the Nez Perce National Forest, Clearwater National Forest, the Idaho portion of the Bitterroot National Forest, and the southern portion of the Idaho Panhandle National Forests—is contiguous to the national forests in the Blue Mountains. In particular, the Hells Canyon National Recreation Area borders and, in fact, includes some of the Nez Perce National Forest. Friends is concerned about the connectivity of fish and wildlife populations between these areas. Further, many of Friends' members also special places in the greater Blue Mountains including Hells Canyon, the Wallowa Mountains, and the Grande Ronde, Tucannon and Wenaha Rivers.

This Objection is being submitted on behalf of the Project by Paula Hood, Co-Director for the Project, who is the Lead Objector, and by Gary Macfarlane, Ecosystem Defense Director for Friends. For purposes of this Objection, BMBP (both the Project and Friends) is represented by legal counsel, the Earthrise Law Center, through Tom Buchele. Mr. Buchele's mailing address, email address, and phone number are set forth above. Please direct all correspondence and responses to this Objection to BMBP's legal counsel, Mr. Buchele.

This Objection follows the guidelines established in 36 C.F.R. § 219. BMBP, both the Project and Friends, has previously submitted timely, written comments regarding this project throughout the periods where public comments were requested.

Notice Published: The public notice regarding the Draft Decision was published on June 29, 2018. Therefore, under 36 C.F.R. § 219.56(a), this Objection is timely because BMBP submitted it within 60 days of June 29, 2018 as that time is computed pursuant to 36 C.F.R. § 219.56(b).

BMBP submits its Objection electronically via email with a list of supporting exhibits and in hard copy via certified U.S. mail with 2 enclosed CDs containing electronic copies of the supporting exhibits.

BMBP requests an Objection Resolution meeting to address the concerns raised in its Objection which are set forth below.

Paula Elizabeth Hood

Paula Hood
Co-Director
Blue Mountains Biodiversity Project

Gary Macfarlane
Ecosystem Defense Director
Friends of the Clearwater

Tom Buchele
Earthrise Law Center
Counsel for Blue Mountains Biodiversity Project and Friends of the Clearwater

Attachments/Enclosures

ISSUES RAISED IN THIS OBJECTION

BMBP's Objection applies to the entirety of the Proposed Action, including the Draft Decision and the Final Environmental Impact Statement ("FEIS"). The following is a list of the issues raised in this Objection along with the corresponding page numbers (hyperlinked).

ISSUE **PAGE NUMBER**

CONCISE STATEMENT EXPLAINING OBJECTION AND SUGGESTING HOW DECISION MAY BE IMPROVED

BMBP's Objection to the Draft Decision contains both general overarching objections to that Draft Decision and to the process used to develop it. The Objection also contains very specific objections to numerous elements of the Draft Decision. BMBP believes the Draft Decision violates specific provisions of the National Environmental Policy Act ("NEPA"), the National Forest Management Act ("NFMA"), the Endangered Species Act ("ESA"), the Wilderness Act, the Multiple-Use Sustained Yield Act ("MUSYA"), the Clean Water Act ("CWA"), and regulations implementing these statutes.

Generally, BMBP objects to the Forest Service's decision to combine the plan revision process for three distinct national forests into one combined process. This procedure has caused the process to be unnecessarily complicated, and likely lead the Forest Service to omit significant relevant information. Another broad basis for this objection is the Forest Service's decision to replace the mostly successful mandatory protections contained in the Eastside Screens Plan Amendments and PACFISH/INFISH Amendments with vague guidelines which offer little or no mandatory protections for forest resources and biodiversity. The Draft Decision also contains numerous, more specific errors and omissions which BMBP discusses in much greater detail in its Objection.

The Forest Service should address BMBP's Objection by withdrawing the Draft Decision and carrying out a new, separate plan revision process for each forest. Those separate plan revisions should include new, strengthened mandatory protections to enhance the Eastside Screens and PACFISH/INFISH standards rather than completely discretionary guidelines that erode existing protections. They should also address each of the more specific errors and omissions identified in this Objection by adopting the remedies or suggested changes throughout this Objection regarding Eastside screens, aquatic resources, bighorn sheep, roads, motorized recreation, Wilderness and roadless areas, forest ecology and fire assumptions, and wildlife. This includes making the changes to the Design Criteria and Monitoring and Evaluation Plans in the Revised Forest Plans; suggested changes to the Design Criteria and Monitoring and Evaluation Plans are noted throughout this Objection, but most thoroughly area addressed in the sections specifically addressing (by page) changes to the Malheur and Umatilla Proposed Revised Forest Plans (and also as discussed therein, to the Wallowa-Whitman Proposed Revised Forest Plan.

LEGAL BACKGROUND

I. National Forest Management Act

The National Forest Management Act ("NFMA"), 16 U.S.C. §§ 1600–1614, is the primary statute governing the administration of national forests. NMFA requires the Forest Service to develop and implement land and resource management plans ("LRMP" or "Forest Plan") for each unit of the National Forest System. 16 U.S.C. § 1604(a). In developing and maintaining forest plans, the Forest Service must "use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences." *Id.* at § 1604(b). Further, the plans must "provide for multiple use and sustained yield of the products and services obtained therefrom" and "include coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness. *Id.* at § (e)(1). The Forest Service has adopted regulations setting forth the process for developing forest plans and the guidelines and standards that must be incorporated into the plans. The Forest Service is mostly using its 1982 planning regulations for this revision. Draft ROD at 3; *see* 36 C.F.R. section 219 (1999); *see also* 16 U.S.C. § 1604(g).

II. National Environmental Policy Act

The principal aims of NEPA are twofold: (1) require agencies to assess significance of the environmental impacts of every action; and (2) ensure that government agencies inform the public of the possible environmental impacts and the reason as to why the government chose to address those impacts. *LOWD/BMBP v. Connaughton ("Snow Basin")*, No. 3:12-cv-02271-HZ, 2014 WL 6977611, at *5 (D. Or. Dec. 9, 2014). "NEPA is a procedural statute that does not 'mandate particular results but simply provides the necessary process to insure that federal agencies take a hard look at the environmental consequences of their actions.'" *Id.* (quoting *High Sierra Hikers Ass'n v. Blackwell*, 390 F.3d 630, 639–40 (9th Cir. 2004). "An agency takes the requisite 'hard look' at environmental consequences when its EIS . . . includes a 'full and fair discussion of environmental impacts.'" *Id.* (quoting *Lands Council v. McNair*, 537 F.3d 981, 1001 (9th Cir. 2008) (en banc), *overruled in part on other grounds by Winter v. Natural Res. Def. Council, Inc.*, 555 U.S. 7 (2008)). "When the public reviews an EIS to assess the environmental harms a project will cause and weighs them against the benefits of that project, the public should not be required to parse the agency's statements to determine how an area will be impacted." *League of Wilderness Defenders v. Connaughton*, 762 F.3d 755, 761 (9th Cir. 2014). "Informed public participation in reviewing environmental impacts is essential to the proper functioning of NEPA. *See e.g.*, *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768, 124 S. Ct. 2204, 159 L.Ed.2d 60 (2004) (describing one of the purposes of NEPA as ensuring "that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.") (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989)); *San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n*, 449 F.3d 1016, 1034 (9th Cir. 2006) (noting that one of the purposes of NEPA is "ensuring that the public can both contribute to that body of information, and can access the information that is made public")." *Id.*

GENERAL OBJECTIONS

BMBP has several overarching objections to this plan revision process that combines the revision process for three distinct national forests.

First by combining these processes, the Forest Service has created an unnecessarily complex process and created analysis documents that are far too long for most of the public to review and understand. This significantly undermines NEPA's public information purpose.

Second, and related to the first general objection, the Forest Service has put forth a single Draft Record of Decision for purposes of allowing the public to object, but that draft admits that the Forest will ultimately issue three final RODS for each revised plan that "will reflect the uniqueness of each national forest." Draft ROD at 1. This procedure effectively prevents the public from objecting to those parts of those final RODs that address the "uniqueness of each national forest" in violation of the Forest Service's objection regulations and NFMA's and NEPA's public participation requirements.

Third, although the planning documents pay lip service to the Multiple-Use Sustained Yield Act's overall goals and definitions, see 16 U.S.C. § 528 and 531, the proposed plan revisions in fact place far too much emphasis on commercial extraction of resources (range and timber) at the expense of other MUSYA resources (outdoor recreation, watershed, wildlife and fish) and mostly ignore the relative value of thee resources, contrary to Section 531's definition. This is easily illustrated the disclosures on page 10 of the Draft ROD which admit that the revised plans would significantly increase timber and grazing jobs, while simply maintaining existing recreation jobs. An example of this flawed relative values analysis is the revised plans' proposed elimination of current protections for large trees, and allowing of commercial logging of large numbers of large trees, especially large grand firs, even though there is currently a significant shortage of all large trees on all three of these national forests. Thus the revised plans mostly ignore the relative value of such large trees and the wildlife habitat they provide, while significantly overstating the relative value of such logging (mostly profits for the Forest Service and commercial logging operations). This violates MUSYA, NFMA and NEPA.

EASTSIDE SCREENS SECTION

I. NEPA Violations

A. The Forest Service's Decision to Allow Logging of Trees Greater Than 21 Inches Diameter Breast Height Violates NEPA.

The Forest Service's Draft Decision allows the logging of trees greater than 21 inches diameter breast height. *See* Draft Decision at 12. This is in sharp contrast to the current land management plans, which prohibit the logging of trees greater than 21 inches diameter breast height. Significantly, the FEIS does not dispute that the conditions that caused the adoption of the prior plan amendments that imposed the 21 inch restriction- a significant shortage of large trees across the landscapes in these forests-continues to exist. The FIES cites no science or compelling reason for nevertheless changing course and allowing for the commercial logging of large numbers of large trees, and especially large numbers of large grand fir, across these forests that already contain far too few large trees of all types. The Forest Service thus failed to adequately support its decision to allow the logging of such trees in the Final Environmental Impact Statement ("FEIS") for the Draft Decision,[1] and as such the Forest Service's decision is arbitrary and capricious and violates NEPA. For the reasons described below, the Forest Service also failed to ensure the scientific integrity of the analysis in violation of NEPA.

BMBP raised Objections relating to the Forest Service's proposal to remove the prohibition on the logging of trees greater than 21 inches diameter breast height in its comments on the DEIS. *See, e.g.,* Blue Mountains Biodiversity Project Comments on the Terrestrial Wildlife Section of the Proposed Forest Plan Revision at 13–16; Karen Coulter Comments on DEIS at Vol. 1 pages 71, 79, 101, 102, 106, 202, 205, 225 and Vol. 3 at 377. However, the Design Criteria related to old forests changed significantly between the Blue Mountains National Forests Proposed Revised Land Management Plan (which is what the public commented on, hereafter referred to as "Combined Forest Plan") and the now-proposed Land Management Plans for the individual forests. *Compare* Blue Mountains National Forests Proposed Revised Land Management Plan at 129 and Malheur Proposed Revised Forest Plan at 138. For example, the verison of the plan released at the comment stage did not include definitions of "large" or "old"; did not include any of the exceptions now included at the objection stage; and did include a guideline stating that [n]ew motor vehicle routes should not be constructed within old forest stands." Combined Forest Plan at 129. Because of these significant changes, many of BMBP's objections below raise issues that were not previously directly commented on.

1. Background of the Eastside Screen Amendments

In 1992, monitoring reports for national forests in Oregon and Washington east of the Cascade Crest expressed concern over forest conditions due to over-logging. *See* U.S. Forest Service, Decision Notice for the Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales (May 20, 1994) (hereafter

[1] *See* U.S. Forest Service Pacific Northwest Region, Final Environmental Impact Statement for the Malheur, Umatilla, and Wallowa-Whitman National Forests Land Management Plan (July 2018).

Regional Forester's Forest Plan Amendment #1), at 9–11. These reports acknowledged that "excess timber cutting can conflict with promoting forest health" and that "the number of trees available for nesting has been declining." *Id.* at 9; *id.* at 10. Further, the reports indicated alarmingly low number of wildlife, including elk, deer, and anadromous fish. *Id.* at 10. The reports specifically noted that there were many reasons for this decline, but one reason was certainly loss of cover from timber harvest. *Id*. The reports also concluded that prior timber harvesting practices "have left numerous treated acres on the Forest without adequate dead tree densities to meet the habitat and needs of primary excavators." *Id*.[2] As a result of these problems, Congress "requested and funded a scientific analysis of the effects of Forest Service management practices on the forest ecosystems in eastern Washington and Oregon." *Id.* at 10–11. Over 113 scientists contributed to the Eastside Forest Ecosystem Health Assessment, concluding that "eastside ecosystems are stressed and unstable" because of "management practices of this century that have reduced density . . . and long-term productivity . . . ." *Id*. at 11.

Because of these scientific findings, on August 18, 1993, the Regional Forester issued an Interim Direction that established riparian, ecosystem, and wildlife standards for timber sales in Eastside forests, including the Malheur, Umatilla, and Wallowa-Whitman National Forests. *Id.* at Appendix A. In addition to other requirements, the Eastside Screens prohibit logging "live trees" greater than 21 inches diameter breast height and timber sale harvest activities within LOS stages that are below the historic range of variability. U.S. Forest Service, Decision Notice for the Revised Continuation of Interim Management Direction, Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales (June 5, 1995) (hereafter "Regional Forester's Forest Plan Amendment #2), Appendix B at 10. This direction is intentionally restrictive and requires the Eastside forests to use certain standards to "screen" timber sales. *Id.* at 2; Regional Forester's Forest Plan Amendment #1 at 2. The purpose of the interim direction is "to preserve future planning options *until completion of the [regional] Eastside EIS,*" which will assess "risks to species, ecological groupings of species, and habitats" throughout the Eastside forests, and will provide long-term strategy for ecosystem management on the Eastside forests. Regional Forester's Forest Plan Amendment #2 at 3; *see also* Regional Forester's Forest Plan Amendment #1 at 2. In 1994 and again in 1995, the Regional Forester extended a modified version of the Eastside Screen pending completion of the regional Eastside EIS. U.S. Forest Service, Final Environmental Impact Statement, Land and Resource Management Plan, Wallowa-Whitman National Forest (April 1990) at AR1659; *see also generally*, Regional Forester's Forest Plan Amendment #2. Although this proposed plan revision includes three eastside forests, it is NOT the regional EIS contemplated by the original amendments. As recently as 2015, in the Regional Forester's guidance for following the Snow Basin decision, the Forest Service acknowledged that the forest conditions justifying the Eastside Screens Restrictions-a shortage of large trees, including grand fir-continues to exist in all of the eastside forests. An actual regional EIS regarding these issues would need to thoroughly disclose and analyze the direct and cumulative impacts of resuming the logging of large trees on the wildlife that depend upon them. The FEIS here never does that. Instead it repeatedly and improperly conflates the impacts of logging "old trees," with logging "large trees," and never actually addresses the direct and cumulative impacts

[2] Primary cavity excavators are wildlife species such as the pileated woodpecker that require dead or defective wood habitat. Such habitat is sometimes referred to as "snags."

on wildlife of resuming the commercial logging of large trees that do not fit within its strained definition of "old trees."

2. *The Forest Service's Decision to Replace the Eastside Screens with a Voluntary Guideline Allowing Logging of Trees Greater than 21 Inches Diameter Breast Height is Arbitrary and Capricious and Violates NEPA.*

The Forest Service's Draft Decision guts the Eastside Screens. Instead of prohibiting the logging of trees greater than or equal to 21 inches diameter breast height, the Forest Service is proposing that the Revised Forest Plans include a *non-binding* guideline that "[m]anagement activities *should* retain and generally emphasize recruitment of old trees, large trees, and legacy trees." *See, e.g.*, U.S. Forest Service, Malheur National Forest Land Management Plan (2018) at 138 (quoting OF-1G).[3]

The Forest Service has not stopped at merely changing the mandatory prohibition to a voluntary guideline, however. The Revised Forest Plans go on to list situational exceptions to the voluntary guideline "where individual old, large or legacy trees may be removed or destroyed":

- Trees need to be removed to meet or maintain desired conditions for species composition on the landscape by removing shade-tolerant species in favor of shade-intolerant species . . .
- Trees need to be removed from high density forest to meet or maintain desired conditions for low density stand conditions on the landscape where removal of smaller trees alone cannot achieve desired conditions.
- Trees need to be removed to control or limit the spread of insect or disease infestation.
- Trees need to be removed to reduce danger/hazard trees along roads or in developed sites.
- Tree need to be removed where strategically critical to reinforce, facilitate, or improve effectiveness of fuel reduction in wildland-urban interfaces.

Malheur Proposed Revised Forest Plan at 138. The Forest Service also included two exceptions that apply "only to large trees that do not also meet the definition of old trees":

- Trees need to be removed to favor aspen, cottonwood, whitebark pine or other special plant habitats.
- Trees needed to be removed to form key pieces in complex instream large wood structures.

[3] Where the proposed Revised Forest Plans are the same, BMBP will only cite to one of the Forest Plans as an example.

Malheur Proposed Revised Forest Plan at 138. Taken together, the voluntary guidelines and the exceptions provide the Forest Service with the largely unbounded discretion to allow logging of old, large, and/or legacy trees.

This significant reversal from the Eastside Screens is contrary to the Forest Service's repeated acknowledgment of the importance of retaining and recruiting large, old, and/or legacy trees in eastside forests due to their rarity on the landscape and their importance to wildlife. Since at least 1995, the Forest Service has recognized the importance of the Eastside Screens and the importance of retaining and protecting large trees in eastern forest landscapes. For example, in 2003 the then-Regional Forester noted recent science emphasized the continuing importance of the Eastside Screens and "reinforce[d] the importance of retaining and recruiting large, old trees in the eastside landscape, particularly (but not only) in Forests historically dominated by single-story LOS." Guidance Letter from Regional Forester Linda Goodman to Forest Supervisors regarding Guidance for Implementing Eastside Screens (June 11, 2003) at 3. In 2015, the Forest Service made a similar statement and also acknowledged that "[l]arge defective grand fir trees and snaps provide critical roosting and denning habitat" for certain species, and that "legacy trees, especially large, hollow grand fir, are rare on the landscape and have declined from historical conditions on the eastside of Oregon and Washington." Eastside Screens Enclosure to Guidance Letter from Regional Forester James M. Peña to Forest Supervisors and Deputy Forest Supervisors regarding Revision of the 2003 Goodman Letter and Guidance on Projects with Proposed Project-Specific Plan Amendments (Sept. 2015) at 1; *see also id.* ("These findings reinforce the importance of retaining and recruiting large, old trees in dry, mesic and moist mixed conifer forests on the eastside of the Region.").

Most pertinently, the FEIS itself acknowledges the importance of old forests. *See, e.g.,* FEIS Vol. 1 at 192 ("Old trees, especially large old trees, found both within old forest stands and as scattered individuals are acknowledged to have great importance as ecological keystones."); *id.* (referring to old trees as "extremely valuable in terms of wildlife habitat, fire and drought resistance and as genetic resources"). The FEIS also discusses the significant lack of old and large trees in the National Forests. *See, e.g.*, FEIS Vol. 1 at 193 (discussing the dramatic decline and great reduction of old forests in the National Forests); FEIS Vol. 2 at 245 ("The availability of large and old trees and large snag habitat is generally lacking in many forest types because of past management practices and altered disturbance regimes."); FEIS Vol. 1 at 7–8 ("There has been a loss of large (20 inches diameter and greater) and medium (15 to 20 inches diameter) trees across the landscape. Within the dry upland forest, where some of the most significant changes in forested structural stages have occurred, the amount of old forest single story has been greatly reduced from pre-1900 levels."). The Forest Service's decision to permit logging of large trees contradicts science and the Forest Service's own acknowledgment that such trees are "extremely valuable" yet greatly reduced on Eastside National Forests.

3. The Forest Service Should Amend the Draft Decision to Prohibit the Logging of Trees Greater than 21 Inches Diameter Brest Height.

Rather than scrapping the Eastside Screens prohibition on logging of trees greater than 21 inches diameter breast height, the Forest Service should retain this prohibition. In other words, the Forest Service should convert OF-1G from a voluntary guideline to a mandatory standard. In addition, the Forest Service should remove five of the seven exceptions to OF-1G. The only exceptions that the Forest Service should retain are the fourth exception ("Trees need to be removed to reduce danger/hazard trees along roads or in developed sites") and the seventh exception ("Trees needed to be removed to form key pieces in complex instream large wood structures."). However, this seventh exception should be modified to include the following italicized language:

> Trees need to be removed to form key pieces in complex instream large wood structures, *but these should be limited to use with river or large creek systems here these are the only trees that could work and where no already-felled hazard trees can be used.*

The other five exceptions provide too much unbounded discretion to the Forest Service to remove large, old, and/or legacy trees. Therefore, in conclusion, we recommend that the Forest Service convert OF-1G to a mandatory standard, remove five of the currently proposed exceptions to OF-1G, and retain two of those exceptions (with one modified as provided above).

Notably, the Forest Service estimates that the Selected Alternative (with no prohibition on logging trees greater than 21 inches) would result in only a "modest" increase in logging in old forests as compared to the current logging under the Eastside Screens prohibition. FEIS Vol. 1 at 206. However, this is a mischaracterization of the Forest Service's own predications. The Forest Service anticipates that logging of old growth in the Malheur National Forest will jump from approximately 500 acres per year to approximately 2,200 acres per year (more than a 400% increase); on the Umatilla National Forest, from approximately 300 acres per year to approximately 700 acres per year (more than a 200% increase); and on the Wallowa Whitman National Forest, from approximately 200 acres per year to approximately 900 acres per year (more than a 400% increase). FEIS Vol. 1 at 205 (comparing the No Action Alternative A (which would retain the Eastside Screens), to the Selected Alterative E-Modified). These are not "modest" increases. Rather, these are significant increases to the amount of logging that will occur in the already greatly depleted old forests.

This analysis of the impacts of logging in "old forests" is completely inadequate. But there is nothing at all in the FEIS regarding the direct and cumulative impacts of the resumed logging of large trees that do not fit within the FEIS's narrow definition of "old forests."

4. The Forest Service's Decision to Allow Logging of Trees Greater than 21 Inches Diameter Breast Height Defeats the "Purpose and Need" of the Revised Forest Plans.

The new voluntary guideline allowing for logging of trees greater than 21 inches diameter breast height defeats the "Purpose and Need" of the Revised Forest Plans. The FEIS describes several Purposes and Needs for the Revised Forest Plans. In order to satisfy each of these Purposes and Needs, the Forest Service must ensure that the Plans will retain and recruit old, large, and/or legacy trees. For example, many animal species depend on old, large, and/or legacy trees for habitat. By adopting a non-binding guideline riddled with exceptions, the Forest Service is ensuring that many of these rare but necessary trees will be logged. Absent such trees, the Forest Service cannot meet the Purpose and Need of the Revised Forest Plans to "adequately protect and restore terrestrial plant and animal species." *See* FEIS Vol. 1 at 7. Similarly, and generally speaking, large trees are more fire resistant and will not significantly limit the ability to control the spread of insects and disease on the forests. *See* FEIS Vol. 1 at 192 (describing old trees as "extremely valuable" for fire and drought resistance).

5. The Forest Service Has Not Provided Any Rationale for Its Decision to Allow Logging of Trees Other than Grand Fir that are Greater than 21 Inches Diameter Breast Height.

As discussed in more detailed below, the Forest Service goes on at great length regarding the purported need to remove large grand fir trees from the National Forests. However, the Draft Decision allows more than the logging of large grand fir trees from the landscape. The Draft Decision allows the logging of *any* type of large tree from the landscape, Draft Decision at 12, despite the fact that large trees of species such as ponderosa pine and Douglas fir are also necessary for wildlife. *See* Guidance Letter from Regional Forester Linda Goodman to Forest Supervisors regarding Guidance for Implementing Eastside Screens (June 11, 2003) at 3. The Forest Service provides no explanation or rationale for this complete reversal of the Eastside Screens for tree species other than grand fir. The Forest Service must explain its decision. Absent such explanation, the Forest Service's decision to allow logging of large trees of all types, besides grand fir, is arbitrary and capricious.

B. The Forest Service's Decision to Define "Large" Grand Fir Differently Than "Large" Trees of Other Species Violates NEPA.

BMBP objects to the Forest Service definition of "large" trees, and specifically to the part of the definition that distinguishes "large" grand fir trees from "large" trees of other species. This definition was not included in the draft documents that were available for review at the comment stage of the plan development process, and therefore BMBP was not able to comment on this issue at that time.

The Forest Service defines "large" trees as follows:

> "Large" trees are live grand fir over 30-inches diameter at breast height or live trees of any other species over 21 inches diameter at breast height.

Malheur Proposed Revised Forest Plan at 138 n. 19. The Forest Service has not provided an adequate explanation to support its rationale for treating grand fir trees differently than trees of other species.

The Forest Service points to coring data to support its decision to treat grand firs differently than other tree species. Specifically, according to the data relied on by the Forest Service, there is less of a correlation between the size of grand firs and their age than there is between trees of other species. *See* FEIS Vol. 1 at 200. However, there are several readily apparent problems with the Forest Service's analysis.

First, it is axiomatic that a grand fir that is 21 inches at diameter breast height is the same size as a tree of any other species that is also 21 inches diameter breast height. It is illogical to define certain species of trees that reach 21 inches as "large" but then define another species of tree that is the same exact size as "not large."

Second, the Forest Service combines coring data for "the major conifer species" and then compares this data to coring data for grand fir. But comparing data for one species to combined data for numerous other species does not give a fair representation of how grand fir compares to other, individual species. Because the data for the individual species is not provided, the public does not know whether any of the other species have similar age/size correlations to grand fir. Without such data, the public cannot determine whether grand fir is different than all of the other species in terms of the age/size correlation.

Third, the Forest Service does not provide sufficient reasoning to support its decision to have a cut limit of 30 inches as opposed to 21 inches for grand fir. As discussed above, the Forest Service states that this greater cut limit for grand fir is based on statistics showing that, as compared to other tree species (collectively), grand fir that are more than 150 years old (*i.e.*, "old" grand fir) are more likely to be at least 30 inches diameter. But nowhere in the FEIS or other documents does the Forest Service analyze the effects of having a higher cut limit for grand fir. For example, approximately how many more trees will be logged with a 30-inch cut limit, as opposed to a 21-inch cut limit? What does this increase mean for the overall presence of old forests in the National Forests, and how will this additional reduction in large trees (trees greater than 21 inches) affect wildlife that depend on large trees for survival? The absence of this analysis in the FEIS demonstrates the insufficiency of the Forest Service's analysis.

Third, the Forest Service acknowledges in the FEIS that "[s]ilviculturists and foresters have known for a long time that diameter is an extremely poor criterion of tree or stand age," and that "[i]ndividual growing conditions or species characteristics often influence diameter as much or more than age." FEIS Vol. 1 at 200. In light of these acknowledgments, the Forest Service's determination that it can adequately protect old grand fir trees by prohibiting the cutting of grand firs less than 30 inches diameter breast height, while at the same time claiming that it can only protect old trees of all other species with a cut limit of 21 inches diameter breast height, is arbitrary and capricious.

Ultimately, the problem with the Forest Service's definition appears to stem largely from the fact that the Forest Service is considering the age of the trees when defining what constitutes a "large" tree. However, the Forest Service has a separate definition of what constitutes an "old" tree. *See* Malheur Proposed Revised Forest Plan at 138 n. 18 (defining old trees as "live trees with distinct features indicating ages of generally 160 years or older"). Importantly, it is large tree structure—not age class of tree—that is important to many wildlife species and that is needed to meet the biological needs of species that depend on them. Large trees are at a deficit across the landscape and are needed by wildlife. Large and mature or commercial-sized trees should not be logged. While thinning may cause remaining individual trees to grow bigger faster, it harms other healthy forest processes and functions (large tree recruitment, snag and large wood recruitment, "defective" trees due to disease and insects, water quality, soils, etc). The definition of "large" trees should be based solely on the size of the tree, and of course a 21-inch diameter breast height grand fir tree is the same size—*i.e.* just as large—as a 21-inch diameter breast height tree of another species. Therefore, the Forest Service's definition of "large trees" is irrational and violates NEPA.

If the Forest Service is truly concerned about grand fir crowding out other tree species, then the Forest Service should be able to sufficiently remediate this problem by logging grand fir that are less than 21 inches diameter breast height. The Forest Service should modify the definition of "large" tree to include any type of tree, *including* grand fir, which is greater than or equal to 21 inches diameter breast height.

C. The Forest Service's Reliance on the Van Pelt Guidelines to Determine the Age of Grand Fir Trees Violates NEPA.

The Forest Service relies upon the Van Pelt Guidelines for its definition of "old" trees. *See* Malheur Proposed Revised Forest Plan at 138 n. 18 (defining "old" trees as "live trees with distinct features indicating ages of generally 150 years or older" and pointing to guidelines in "Van Pelt 2008"). However, the Van Pelt Guidelines are entirely inadequate to determine the age of grand fir trees.

The Forest Service acknowledges that the Van Pelt guidelines contain no clear direction for identifying or conserving old grand fir (~150 years or older). *See* FEIS Vol. 1 at 202–03 (stating that the Van Pelt Guidelines "contain[] no guidelines specific to grand fir"). Yet the Forest Service still cites the Van Pelt Guidelines as the tool by which the Forest Service will identify "old" trees. The Van Pelt Guidelines do contain clear direction for identifying old Ponderosa pine and (to a lesser extent) douglas-fir, but these are not applicable to grand fir. The Van Pelt Guidelines contain a couple of vague and subjective statements about the branching patterns of older grand fir, but do not quantify or give any concrete specifications or guidelines about how exactly to use these characteristics to identify older grand fir.

The Forest Service, presumably in an attempt to salvage their reliance on the Van Pelt Guidelines to identify "old" grand fir, states that, despite the fact that the Van Pelt Guidelines are not specific to grand fir, "the use of guidelines like the ones proposed by Van Pelt (2008), as well as the development of new guidelines, would likely allow for the reasonably accurate identification of individual trees of significant age to occur in an efficient, practical manner." FEIS Vol. 1 at 202–03. However, the Forest Service does not explain what these new guidelines are, when these new guidelines will be finalized, and how the new guidelines could help identify "old" grand fir when the Van Pelt Guidelines could not do so.

Similarly, BMBP objects to the Forest Service's implication that trees less than 150 years old are "young." A tree that is, for example, 90, 120, or 145 years old is not "young." To use this biased language and create an artificial binary that greenwashes the logging of mature trees is disingenuous and fails to recognize the fact that wildlife that depend on these tree care more about the size of the tree than about the age of the tree.

D. The Forest Service Must Revise the Draft Decision to Prohibit New Road and Trail Construction Within Old Growth Forest Stands.

BMBP objects to the fact that Selected Alternative E-Modified does not include a guideline that would prohibit new road and trail construction within old growth forest stands. *See* FEIS Vol. 1 at 198–99. Alternatives B–D, E, and F include such a guideline. FEIS Vol 1. at 197–98. The Forest Service has provided no explanation as to why such Alternative E-Modified does not include such a guideline. Importantly "[t]he effects of roads on old-forest habitat effectiveness" is a "key indicator" that the Forest Service considered when looking at "[t]he viability of wildlife species associated with old forest structures." FEIS Vol. 2 at 246. Without such an explanation, the Forest Service's decision violates is arbitrary and capricious and violates NEPA.

E. The Forest Service Violated NEPA by Performing an Inadequate Cumulative Impacts Analysis.

Council on Environmental Quality ("CEQ") regulations require agencies to analyze the cumulative impacts of the proposed action. 40 C.F.R. § 1508.25(c)(3). Cumulative impacts are the impacts on the environment which result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. *Id*. at § 1508.7. They can result from individually minor but collectively significant actions taking place over a period of time. *Id*. A cumulative impact analysis "must be more than perfunctory; it must provide a 'useful analysis of the cumulative impacts of past, present, and future projects.'" *Kern v. BLM*, 284 F.3d 1062, 1075 (9th Cir. 2002). "Moreover…an agency must provide 'some quantified or detailed information;…general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided.'" *Ocean Advocates v. U.S. Army Corps. of Eng'rs*, 402 F.3d 846, 868 (9th Cir. 2004). Conclusory statements do not satisfy the "hard look" that NEPA requires. *Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 996 (9th Cir. 2004). If the Forest Service restricts this cumulative impacts analysis, it "would be easy to underestimate the cumulative impacts of the timber sales, and of other reasonably foreseeable future actions…Such a restricted analysis would impermissibly subject the decisionmaking process contemplated by NEPA to 'the tyranny of small decisions.'" *Kern*, 284 F.3d at 1078 (citation omitted).

The Forest Service failed to consider the effects of the Draft Decision in conjunction with the effects of ongoing or future reasonably foreseeable projects on the National Forests. These Projects were all adopted under the current Forest Plans, which are significantly different than the proposed Forest Plans. NEPA requires that the Forest Service consider the cumulative effects that the ongoing or reasonably foreseeable projects and the Draft Decision will have on the environment, including on wildlife species and aquatic resources. The Forest Service must conduct an adequate cumulative effects analysis.

The Forest Service's analysis of the cumulative impacts to Forest Service Sensitive Species is likewise inadequate. This analysis is merely a recital of the various activities or issues, such as climate change, that might affect certain sensitive species. However, nowhere does the

Forest Service attempt to analyze how these projects and issues, along with the Draft Decision, might cumulatively affect the species. *See* FEIS Vol. 2 at 296–97.

F. The Forest Service violated NEPA by Failing to Analyze the Direct and Cumulative Impacts of Logging Large Trees

Nowhere in the FEIS does the Forest Service acknowledge or analyze, either qualitatively or quantitatively, the direct or cumulative impacts of removing the Eastside Screens mandatory protections for large trees, over 21 inches DBH. The Eastside Screens themselves and all recent science acknowledge that both "old forests" and large trees outside of "old forests" provide essential habitat for multiple wildlife species. Although the FEIS does contain some, albeit completely inadequate, analysis regarding the impacts of the logging the Forest Service will now allow in "old forests," there is simply no analysis of the direct and cumulative impacts of the proposed, resumed logging of large trees generally and especially large, grand fir.

Many cavity nesting species need large snags. As the Regional Forester's 2003 Guidance for Implementing the Eastside Screens acknowledged, what is critical for these species is the size of the snag. These species do not distinguish between 21inch trees that were "old" when they died and became a snag and 21 inch trees that were relatively "young" when they did so. Moreover, there is no evidence that species such as the pileated woodpecker prefer ponderosa pine snags over grand fir snags. Indeed the most recent science shows exactly the opposite. Similarly there is no science indicating that grand fir snags are only useful to these species when they are over 30 inches DBH. Bull, 1987 (attached) found that for 67% of nesting sites, the surrounding stand was Grand Fir Forest Type. Bull and Holthousen, 1993 (attached) specifically recommended that habitat areas for pileated woodpeckers be 75% grand fir. Bull et al, 2007 (attached) concluded that nesting density for pileated woodpeckers was negatively associated with ponderosa pine forest types. The Forest Service is eliminating the East Side Screens existing protections for both "old forests" (ie. LOS forests) and for large trees (ie trees over 21 inches dbh). The FEIS therefore needs to disclose and analyze the direct and cumulative impacts of removing both restrictions. It completely fails to do so for its proposed logging of large trees and its specific focus of logging large grand fir. Any cumulative impacts analysis of the removal of these restrictions would need to include specific information regarding the repeated site specific amendments that the Forest Service has repeatedly used in the past, especially in the Malheur, to evade the Eastside Screens restrictions on logging large grand and douglas fir.

G. The Forest Service Violated NEPA by Issuing a DEIS for Public Comment That is Overly Long, Confusing, and Substantially and Materially Different than the FEIS.

"NEPA's public comment procedures are at the heart of the NEPA process . . . . To effectuate this aim NEPA requires not merely public notice, but public participation in the evaluation of the environmental consequences of a major federal action." *State of California v. Block*, 690 F.2d 753, 770–771 (9th Cir. 1982); 40 C.F.R. § 1500.1(b) (under NEPA public scrutiny is "essential"). To meet these goals, NEPA requires that the USFS prepare a draft EIS that "fulfill[s] and satisf[ies] to the fullest extent possible the requirements established for final statements." 40 C.F.R. § 1502.9(a). The USFS also must circulate the draft EIS for public comment. 40 C.F.R. §1503.1. Because agencies are not required to solicit public comment on their final EIS, the public's only meaningful opportunity to comment on and influence an agency's NEPA analysis is at the draft EIS stage. If an agency withholds significant information regarding its DEIS analysis or substantially changes its analysis in its FEIS, an agency can effectively insulate its decision-making process from public scrutiny. *See Block*, 690 F.2d at 771. Thus, NEPA requires an agency circulate a supplemental draft when the original DEIS was "so inadequate as to preclude meaningful analysis" or "there are significant new circumstances or information relevant to environmental concerns." 40 C.F.R. § 1502.9(a) and (c)(1)(ii); see also 40 C.F.R. § 1500.2(d) (agency must "encourage and facilitate public involvement in decisions").

BMBP raises several objections regarding the length and format of the FEIS and the differences between the FEIS and the FEIS. First, as an initial matter, BMBP objects to the size of the FEIS. CEQ regulations provide that final environmental impact statements "shall normally be less than 150 pages and for proposals of unusual scope or complexity shall normally be less than 300 pages." 40 C.F.R. § 1502.7. The FEIS here comprised four volumes of approximately 1,171 pages (excluding the cover sheet, summary, table of contents, list of preparers, list of agencies, organizations, and persons to whom copies of the statement are sent, indices, and appendices). Assuming that revising the land management plans for three separate national forests in one EIS is a matter of "unusual scope and complexity," the FEIS for this Proposed Action is more than three times the length urged by regulation.

The sheer size of the FEIS here makes it virtually impossible for the public to adequately review and analyze the FEIS. When including the appendices to the FEIS—which contain substantive information that the public must review in order to understand the Project—the total number of pages rises to 1,651. This problem is heightened by the fact that the public only has 60 days to review and raise Objections to the FEIS.

Second, BMBP objects to the FEIS on the grounds that it is significantly different than the DEIS for the Proposed Action.

Third, BMBP objects to the FEIS on the grounds that it is organized in a confusing manner that precludes the public from being able to readily understand the document. CEQ regulations require that FEIS "be written in plan language . . . so that decisionmakers and the public can readily understand them." 40 C.F.R. § 1502.8. Unfortunately, the Forest Service has broken up its analysis here in a manner that makes it incredibly confusing and difficult for the public to understand, and this problem is exacerbated by the size of the FEIS itself.

II. NFMA Violations

BMBP objects to the Draft Decision on the grounds that the Forest Service's decision violates NFMA. NMFA's implementing regulations require that the Forest Service adopt forest plans which protect fish and wildlife resources:

> Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the

> estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.

36 C.F.R. § 219.19 (1982 Planning Rule, as amended).[4] Similarly, the regulations also require that "Forest Planning shall provide for diversity of plant and animal communities and tree species consistent with the over-all multiple-use objectives of the planning area." 36 C.F.R. § 219.26 (1982 Planning Rule, as amended). The Draft Decision violates these requirements.

A. The Draft Decision Violates NMFA Because It Fails to Ensure That Viable Populations of Species Will Be Maintained.

It is indisputable that many fish and wildlife species depend on large trees and large snags for habitat. Notably, the Forest Service consistently talks about the importance of protecting "old" trees for fish and wildlife; however, generally speaking, it is not the age of the tree that is most important to fish and wildlife. Rather, the size of the tree, and whether it is a live tree or a dead tree, are often more important features of trees to fish and wildlife than the age of the trees. The number of large trees and large snags on the National Forests is greatly reduced from historic levels. *See, e.g.*, FEIS Vol. 2 at 245 ("The availability of large and old trees and large snag habitat is generally lacking in many forest types because of past management practices and altered disturbance regimes. Restoration of these key habitat components is important for several surrogate wildlife species."); FEIS Vol. 2 at 259 ("The availability of large snags (generally greater than 20 inches diameter) across the landscape has been reduced below historic levels by past management practices, especially within dry and mesic forests"). Because of the rarity of large trees and snags on the landscape, the Forest Service itself must acknowledge the importance of retaining such trees:

> [R]emoving large trees affects not only size class distributions of forest stands, but also the recruitment of snags over time and would reduce the density of large snags on a landscape basis. Given the existing conditions, large tree removal on or off National Forest System lands would affect distribution of the large tree component and future snags and coarse woody debris at a landscape scale. Therefore, the retention and future development of these critical components on National Forest System lands would be essential to providing habitat elements needed by many species.

FEIS Vol. 2 at 224.

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[4] NMFS's implementing regulations were updated in 2012. However, the Forest Service has chosen to follow the provisions of the 1982 version of the planning regulations (as amended), except in certain circumstances. *See* Draft ROD at 3–4. Unless expressly stated, all references to NMFA's implementing regulations refer to the 1982 regulations (as amended).

Despite recognizing that retaining large trees and snags in the National Forests is "essential" for many species, the Forest Service's Draft Decision will allow for a significant increase in the logging of large trees in the Forests. *See* FEIS Vol. 1 at 205 (compare No Action Alternative A to Selected Alternative E-Modified, showing that on two of the National Forests logging in old forest will increase by more than 400 percent and in the third forest by more than 200 percent). Logging of large trees not only eliminates current habitat for dependent species; it also decreases the number of large trees that eligible to become large snag habitat in the future. The Forest Service itself acknowledges that the Selected Alternative "has limited protection of large trees or snags." FEIS Vol. 2 at 263. The Forest Service attempts to rationalize its decision to not protect this essential habitat in the near-term, because in the long-term "forest vegetation treatment swill accelerate the development of large trees, which will eventually make large snags." FEIS Vol. 2 at 263. However, according to the Forest Service it takes 150 years for a tree to develop into a large snag. Thus, the Forest Service's predictions regarding the effects of the Draft Decision on the viability of species in the long-term aside, the Draft Decision does not ensure the viability of species in the near-term.

The Forest Service's predictions regarding the viability of the outcome of the Draft Decision on certain species are quite dire. The Forest Service used five different "viability outcomes" to assess the Draft Decision's effects on the viability of surrogate species. Two of the Outcomes, Outcomes E and D, describe dire situations for surrogate species. Outcome D states:

> Suitable environments are low to moderately distributed across the historical range of species. Suitable environments exist at low abundance relative to their historical conditions. While some of the subpopulations associated with these environments may be self-sustaining, there is limited opportunity for population interactions among many of the suitable environmental patches of species with limited dispersal ability. For species for which this is not the historical condition, reduction in species' range in the assessment area may have resulted. These species may not be well distributed across the assessment area.

FEIS Vol. 2 at 272. Outcome E states:

> Suitable environments are highly isolated and exist at very low abundance relative to historical conditions. Suitable environments are not well distributed across the historical range of the species. For species with limited dispersal ability there may be little or no possibility of population interactions among suitable environmental patches, resulting in potential for extirpations within many of the patches, and little likelihood of recolonization of such patches. There has likely been a reduction in the species' range from historical conditions, except for some rare, local endemics that may have persisted in this condition since the historical period. Surrogate species with this out come are not well distributed throughout much of the assessment area.

FEIS Vol. 2 at 272.

The Forest Service has determined that several species fall within Outcomes D and Outcome E. Specifically,

- Malheur National Forest
    - Outcome D
        - American Marten (short term; longterm C/D)
        - Ash-throated Flycatcher (short term and long term)
        - Boreal Owl (short term and long term)
        - Fox Sparrow (short term)
        - Lewis's Woodpecker (short term C/D)
        - Western Bluebird (short term; long term C/D)
    - Outcome E
        - White-headed woodpecker (short term and long term)
        - Wolverine (short term and long term)
- Umatilla National Forest
    - Outcome D
        - Ash-throated Flycatcher (short term and long term)
        - Western Bluebird (short term C/D)
        - White-headed Woodpecker (long term)
        - Wolverine (short term C/D; long term C/D)
    - Outcome E
        - White-headed Woodpecker (short term)
- Wallowa-Whitman National Forest
    - Outcome D
        - Western Bluebird (short term C/D)
        - White-headed Woodpecker (long term)
        - Wolverine (short term and long term)
    - Outcome E
        - White-headed Woodpecker (short term)

FEIS Vol. 2 at 273–277 (Tables 333–335). Especially with regard to Outcome E: how can the Forest Service determine that its ensuring the viability of species, when it predicts that there may be potential extirpations of certain populations of the species?

Further, the Forest Service's viability determinations are frequently based on the effects of the Proposed Action 50 years into the future. *See e.g.*, FEIS Vol. 2 at 251 (in discussing the Selected Alternative, noting that it "would result in the greatest increase in open canopy old forest habitat in the dry upland forest at 50 years."). While this may benefit certain species 50 years from now, there is little consideration given to how the Draft Decision will affect species that depend on old growth in the near future. The Forest Service must ensure that the viability of the species in the short term, as well as the long term.

The Forest Service cannot possibly have conducted an adequate viability analysis regarding cavity nesting species without acknowledging and analyzing the direct and cumulative impacts of eliminating the Eastside Screens mandatory restrictions on logging large trees (21 inches dbh and over). That never occurs in the FEIS or anywhere else in the record that BMBP can find.

In addition, because the Selected Alternative does not prohibit the building of roads and trails through old forest, it "has limited emphasis on reducing the effects that roads have on old forest-associated surrogate wildlife species." FEIS Vol. 2 at 252; *see also* FEIS Vol. 2 at 256 (discussing Selected Alternative and stating that "the risk factors associated with motorized access would continue to reduce the viability of some surrogate wildlife species"). "The influence that roads currently have across the Plan Area is extensive" and "[h]igh road densities reduce the viability outcomes for several surrogate wildlife species" including wolverines, northern goshawks, American martens, bald eagles, and peregrine falcons. FEIS Vol. 2 at 253. The Forest Service should include in the Draft Decision a prohibition on the building of roads and trails through old forest.

Similarly, for the Malheur National Forest, the Proposed Action will result in a five percent increase in the amount of area designated as suitable for summer motorized use. FEIS Vol. 2 at 255. More generally, the Forest Service acknowledges that "the risk factors associated with motorized access would continue to reduce the viability of some surrogate wildlife species." FEIS Vol. 2 at 256. The fact that the Selected Alternative might be the second best alternative with regard to contributing towards population viability of surrogate species, FEIS Vol. 2 at 256, does not, in fact, mean that the Alterative is sufficient to ensure the viability of the species.

BMBP objects on the grounds that the Draft Decision does not contain a restriction on snag size for firewood collection. As discussed previously, snags are very important to wildlife. The Forest Service acknowledges that firewood cutting "directly influence[s] the availability of habitat for snag-dependent surrogate species." FEIS Vol. 2 at 259. Several of the non-selected alternatives include a protective measure that seeks to ameliorate the risk to large snags from firewood cutting by restricting harvest to within 300 feet of a road and to snags less than 20 inches diameter per a firewood collection permit. FEIS Vol. 2 at 260. However, the Selected Alternative continues no restriction on snag size for firewood collection. FEIS Vol. 2 at 260. The Forest Service provides no explanation for why this prohibition is not included in the Selected Alternative. FEIS Vol. 2 at 260; *see also* FEIS Vol. 2 at 262–63. Further, the Forest Service states that this Alternative "should provide the greatest benefit to species associated with large snags in the long term because forest vegetation treatment will accelerate the development of large trees, which will eventually make large snags." FEIS Vol. 2 at 263. However, the Forest Service gives no consideration to how the Selected Alternative—which includes limited management direction regarding snag habitat and roads and has limited protection of large trees or snags—would affect species that rely on large snags in the more near-term or immediate future. FEIS Vol. 2 at 262–63. The Forest Service cannot adequately protect the viability of species as it is required to do pursuant to NMFA, when it does not adopt measures that it itself recognizes as necessary to protect the species and when it does not fully consider how its Draft Decision will affect species in the short-term. The Forest Service should include in the Draft Decision a restriction on the size of snags that people can harvest for firewood.

With regard to management indicator species, the alternatives considered by the Forest Service, including the Selected Alternative, did not consider an adequate number and range of management indicator species as required by 36 C.F.R. 219.19. (1982 Planning Regulation, as amended). Further, the Forest Service has not conducted the studies necessary to determination the population trends of the management indicator species. Without such studies, and without considering an adequate number and range of management indicator species, the Forest Service cannot adequately determine or protect the viability of management indicator species or ensure diversity of species on the National Forests. Thus, the Forest Service must conduct such studies and re-do the EIS analysis so that it can consider an adequate number and range of management indicator species in the analysis.

B. The Draft Decision Violates NFMA Because the Proposed Plans Do Not Provide for Diversity of Animal Communities Consistent with the Overall Multiple-Use Objectives of the Planning Area.

NMFA's implementing regulations state that "[f]orest planning shall provide for diversity of . . . animal communities . . . consistent with the overall multiple-use objectives of the planning area." 36 C.F.R. 219.26 (1982 Planning Regulations, as amended). The Forest Service's Draft Decision does not satisfy this requirement for the same reasons as discussed above regarding why the Proposed Plans do not adequately ensure the viability of species. BMBP commented on these issues at the DEIS stage. *See, e.g.,* Karen Coulter Comments starting on DEIS Vol 3. at 376.

AQUATICS SECTION

I. The Blue Mountains Forest Plan Revision proposes weaker protections for water quality, riparian ecosystems, and sensitive and ESA-listed aquatic species compared to PACFISH/INFISH direction. The BMFPR's desired conditions, guidelines, and standards will not adequately uphold water quality standards or provide for the viability of native, at-risk, or ESA-listed species.

Timber management standards in the Blue Mountains Forest Plan Revision and will not provide sufficient protections to ensure water quality, the viability of native and at-risk aquatic species, or ecological integrity of riparian habitats.

The BMFPR and the ARCS recognizes that the upward trends towards recovery across the landscape are a result of PACFISH/INFISH protections. The FEIS repeatedly acknowledges that PACFISH/INFISH direction has been instrumental in creating upward trends towards recovery for streams, water quality, and riparian areas (FEIS Vol. 1, Chap. 3, pg. 149, 162, 163, 368). The BMFPR notes that "riparian areas in the project area are in improved condition and are trending toward continued recovery" and that "riparian and aquatic habitat conditions are currently trending upward" following 15-plus years of management under PACFISH/INFISH (FEIS Vol. 1, Chap. 3, pg. 149). The overarching TM-1 standard is a key guiding component of those protections. PACFISH/INFISH standards, such as the TM-1 standard, clearly prioritize protection of quantitative Riparian Management Objectives (RMOs) in order to protect water quality and fish, and prohibit timber management that would degrade RMOs (emphases added):

> "TM-1 Prohibit timber harvest, including fuelwood cutting, in Riparian Habitat Conservation Areas, except as described below. Do not include Riparian Habitat Conservation Areas in the land base to determine the Allowable Sale Quantity, but any volume harvested can contribute to the timber sale program.
>
> a. Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting in Riparian Habitat Conservation Areas only where present and future woody debris needs are met, **where cutting would not retard or prevent attainment of other Riparian Management Objectives,** and where adverse effects on listed anadromous fish can be avoided. For watersheds with listed salmon or designated critical habitat, complete Watershed Analysis prior to salvage cutting in riparian corridors.
>
> b. Apply silvicultural practices for Riparian Habitat Conservation Areas to acquire desired vegetation characteristics where needed to attain Riparian Management Objectives. Apply silvicultural practices **in a manner that does not retard attainment of Riparian Management Objectives** and that avoids adverse effects on listed anadromous fish"

The Riparian Management Objectives (RMOs) protected by standards and guidelines are the cornerstones of PACFISH/INFISH's success in producing significant upward trends towards recovery. RMOs are protected through clear and enforceable standards for stream temperatures, bank stability, bank angle, pool width to depth ratios, and others. The PACFISH/INFISH standard TM-1 deliberately focuses on clearly defined and enforceable protections (RMOs) that are directly tied to water quality parameters and the biological requirements of sensitive native fish. As a result, PACFISH/INFISH has successfully produced clear and measureable positive trends across the landscape corresponding to TM-1 and RMOs protections.

The comparable overarching standard proposed in the ARCS does not provide equally strong protections: "Standard TM-1S is the overarching guiding standard: "Silvicultural treatments shall occur in riparian management areas only as necessary to maintain, enhance or restore **desired conditions** for aquatic and riparian resources" and that these activities shall **"avoid or minimize adverse effects to aquatic and riparian resources""** ROD (pg. 22). The TM-1S standard proposed in the BMFPR lacks clear protections for water quality parameters or ecological conditions needed to protect water quality and riparian habitats, or maintain the viability of sensitive aquatic species. "Desired conditions" as described by the ARCS are qualitative rather than quantitative, extremely vague, and almost entirely subjective and unenforceable. The USFS's decisions to do away with clear enforceable standards in favor of "flexibility" and "qualitative" standards is arbitrary and capricious, and agency does not provide reasoned or common-sense rationales for the abandonment of PACFISH/INFISH, RMOs, or quantitative standards.

The proposed overarching standard TM-1S does not prioritize the protection of water quality parameters and instream habitat conditions over other "desired conditions" such as vegetation composition. As a result, it will not sufficiently protect water quality or the viability of native or ESA-listed aquatic species. The ARCS's focus on riparian vegetation as the majority of proposed "active restoration" activities is incongruous with the primary problems and drivers of water quality impairments, instream habitat degradation, and at-risk aquatic species struggling to recover. The FEIS notes "[o]n the national forests, the two most common causes of water quality degradation are increased stream temperature and increased fine sediment in streams, measured either as turbidity or as suspended sediment" (FEIS Vol. 1, Chap. 3, pg. 436). Road-related issues such as chronic erosion and fine sediment loading into streams, broken or faulty culverts that eliminate thousands of stream miles of habitat, changes to peak and base flows, potential stream temperature increases, alteration of watershed hydrology, and other issues caused by roads are far more direct and pervasive threats to water quality, instream habitats, native aquatic species, and ESA-listed fish than perceived problems with vegetation condition/HRV. For example, "[a]ccess to more than 3,700 stream miles on the three national forests is blocked or partially blocked by culverts that were not originally designed for fish passage" (MNF Forest Plan, pg. 19). Grazing is also a far more pervasive and direct threat to water quality and riparian ecosystems. For example, the FEIS notes in relation to riparian impacts from grazing: "degraded stream channels may remain in relatively poor condition long after the original impact because changes in stream channel conditions may make these streams more susceptible to damage from subsequent floods, making it difficult to identify the principal cause of degradation. Maloney et al. (1999) reported elevated stream temperatures in intensively grazed watersheds in the John Day basin, and the lowest stream temperatures were observed in ungrazed watersheds, but results were confounded by 100 years of prior grazing history." Agency direction in the BMFPR unfortunately does not align with addressing primary problems and drivers of water quality impairments and riparian habitat degradation such as roads, grazing, logging, and other actions that increase stream temperature and fine sediment loading. The agency's decision to instead focus on silvicultural-based solutions is arbitrary and capricious, and runs contrary to the USFS's analysis of existing conditions which shows that "[m]uch of the recovery to date has occurred in terms of riparian vegetation with recovery in stream morphology tending to be slower and more localized" and that this slower recovery is, in part, "also due to the multiple impacts affecting stream hydrology (such as roads, livestock, Forest Service management, fire management, recreation, and so forth)" (FEIS Vol. 1, Chap. 3, pg. 149). The BMFPR shows a clear and unreasoned bias in favor or "restoring" controversial perceived problems regarding vegetation HRV, rather than addressing the much more pervasive impairments and proven issues threatening water quality, native and at-risk aquatic and riparian species, and their habitats. BMBP commented on this issues in response to the BMFPR DEIS. For example, on page 43 of our DEIS comments: "It is unclear how and why it was determined that vegetation manipulation (for example fuels treatments or other logging as "restoration") in riparian areas would dominate the restoration activities for riparian and aquatic resources. The primary threats and stressors to fish, amphibians, reptiles, and other riparian and aquatic species on NF lands are due to grazing, timber harvest, and roads, and include impacts related to fine sediment inputs, warming stream temperature, increased diurnal stream temperature fluctuations, stream bank instability, soil compaction and erosion, fish passage barriers, etc. The emphasis on logging and vegetation manipulation as the primary means of restoration is not in line with the actual impacts, threats, and stressors to listed and at-risk riparian and aquatic species. Logging and vegetation manipulation does little to alleviate these impacts, stressors, and threats, and in fact may exacerbate them."

The TM-1S standard also lacks any mechanism to prevent widespread degradation of water quality and stream habitat degradation in the pursuit of ecologically risky and controversial silvicultural activities to "restore" vegetation HRV in riparian corridors. The USFS's disproportionate focus on "vegetation management" and logging-based solutions are reflected in Tables 2-4 of the Blue Mountains ARCS. For example, non-silvicultrual activities such as fish passage restoration, channel morphology, floodplain connectivity, road-related density or sediment reduction include **2,300 acres soil hydrologic function improvement; 749 stream miles** of morphology and connectivity improvement; **250 culverts repaired/replaced**; and **900-1,500 road miles** of sediment and hydrologic connectivity reduction over 10 years (ARCS, Tables 2-5, pg. 41-42). The proposed culvert restoration addresses only a small portion of the extremely widespread problem with fish passage barriers: "more than 1,285 culverts block or impair access by aquatic species to more than 3,700 miles of streams within the three national forests in the Blue Mountains" (BMFPR MNF Forest Plan pg. 34). In contrast, vegetation-based "restoration" objectives that appear to involve vegetation manipulation or silvicultural activities are proposed for approximately 22,800 acres *annually* (**228,000 acres over 10 years**) and between **1,649 - 2,249 miles of streamside corridors** during the life of the plan across the three National Forests. Additionally, there were approximately 1,665 – 2,590 acres and 278 stream miles in Tables 2-5 in which it is unclear what sort of restoration activities are proposed—i.e., whether vegetation management and silvicultural activities are included as possible activities on these acres and stream miles. (ARCS, Tables 2-5, pg. 41-42). Vegetation management and silvicultural activities will inevitably include rebuilding and maintenance of existing roads, and building of "temporary" roads that have long-term impacts on the landscape. Vegetation manipulation and silvicultural-based activities within riparian corridors are likely to increase stream temperatures and fine sediments, exacerbate climate change-related impacts, negatively affect wildlife habitats and corridors, and other potentially negative unintended effects.

The BMFPR and ARCS does not clearly define what constitutes "active restoration", and repeatedly lumps together silvicultural-based vegetation management activities with less ecologically risky restoration activities such as eliminating fish passage barriers through culvert repair and replacement, road obliteration or recountouring, increasing aquatic and terrestrial connectivity, placing large wood in streams, and other similar activities. The failure to clearly define or analyze what sorts of activities are proposed for restoration, repeatedly and throughout the FEIS and the Forest Plans, creates a situation in which the USFS has not accurately or transparently analyzed the effects or repercussions that may be associated with those activities.

The TM-1S standard only directs that silvicultural activities "**avoid or minimize adverse affects to aquatic and riparian resources"**. Language such as 'avoiding' or 'minimizing' renders the standards almost entirely subjective and unenforceable. This problem is exacerbated by vague language regarding 'aquatic and riparian resources' without defining which aquatic and riparian resources are to be emphasized for protection, or attaching any quantitative standards to those resources. The lack of quantitative standards for water quality and riparian habitat parameters will leave water quality and riparian habitats conditions that support fish open to serious and widespread degradation. The TM-1S standards proposed in the BMFPR does not provide for consistent, clear, or enforceable protections for water quality or riparian habitats, and will not protect the viability of sensitive and ESA-listed fish and aquatic species.

Furthermore, the proposed standards and guidelines would allow degradation of water quality and riparian habitat parameters. Standard RMA-1S allows for degradation of water quality if it facilitates "long-term recovery". However, the degree of degradation, what constitutes "short-term" degradation, and what sort of long-term recovery would warrant allowing degradation of water quality or riparian habitats is not defined, and is completely subjective and unenforceable. In combination with the problems discussed above regarding TM-1, there is a very serious lack of any real protection for water quality, native and at-risk aquatic species, and riparian habitats. For example, RMA-1S states "[w]hen riparian management area desired conditions are functioning properly, projects shall protect or maintain those conditions. When riparian management area desired conditions are not yet achieved or riparian management areas have impaired function or are functioning-at-risk and to the degree that project activities would contribute to those conditions, projects or permitted activities shall restore or not retard attainment of desired conditions. Short-term adverse effects from project activities may occur when they support long-term recovery of riparian management area desired conditions." Again, the extremely subjective nature and lack of timeline or clear quantitative standards created by use "desired conditions" instead of PACFISH/INFISH direction and RMOs create a situation in which there will be little to no agreed upon mechanisms for protection of specific water quality parameters or instream habitat conditions. The subjective, changeable nature of these "desired conditions" does not allow for a timeframe for attainment, transparency, accountability, or enforceability. In addition, allowing for "short term" negative impacts for perceived long-term benefits is a very risky and highly subjective strategy. Localized and short-term impacts can be devastating to small or struggling populations of aquatic species. For example, Reiman et al.

(2001) noted in relation to accelerated restoration schedules that: **"…vulnerable aquatic species could be impacted in the short term in ways from which they could not easily recover, even if long-term benefits eventually became evident in later years"** (also cited in the USFS proposed Forest Plan Revision (2014)). When at-risk aquatic species such as Bull trout have already fragmented and small populations and are currently limited by water quality impairments such as high stream temperatures, cumulatively creating widespread situations in which their populations cannot easily recover from management effects across miles of streams is extremely risky at best.

BMBP commented on our concerns regarding the lack of quantitative and enforceable standards for protecting riparian resources in the DEIS, and emphasized that the use of standards in relation to current RMO protections should be continued. (BMBP's Comments on Aquatics Section of Proposed BMFPR DEIS pgs. 1, 26, 36, 41, 48, 58, and 59). The EPA has also raised concerns about the lack of quantitative riparian management direction. The ROD pg. 22 notes: "The EPA expressed a concern for the lack of quantitative riparian management objectives for water temperature, large wood, bank stability, bank angle, width depth ratio, and pool frequency. The EPA further recommended that the final environmental impact statement and land management plans include additional specificity about the types of harvest treatments that would be pursued in riparian zones." Unfortunately, the BMFRP ignores these EPA recommendations and abandons these quantitative management objectives—despite their demonstrated effectiveness in protecting and improving riparian ecosystem integrity, and habitat and population trends.

The FEIS acknowledges that PACFISH/INFISH protections have been insufficient for recovery in certain areas. The FEIS Vol. 1, Chap. 3, pg. 149 states: "With localized exceptions, riparian areas in the project area are in improved condition and are trending toward continued recovery (Archer 2016 a-c). **Much of the recovery to date has occurred in terms of riparian vegetation with recovery in stream morphology tending to be slower and more localized.** In part, this is due to the nature of the processes involved (for example, vegetation can grow and reproduce relatively quickly given the opportunity while **hydrologic process recovery takes more time**). It is **also due to the multiple impacts affecting stream hydrology (such as roads, livestock, Forest Service management, fire management, recreation, and so forth)**" (emphases added). Areas of recovery that have not been as successful or have been slower under PACFISH/INFISH are hydrologic processes, which are affected by roads, livestock, and other management. A large number of scientific studies have implicated roads as a driving or primary factor in altering watershed hydrology and/or declines in fish stocks (Bader 2000; Bradley et al. 2002; Carnefix and Frissell 2009; DellaSala et al. 2011; Frissell and Carnefix 2007; Public Lands Initiative 2004; Reiman and Clayton 1997; Reiman et al. 2000; Thurow et al. 2001; Public Lands Initiative/Trout Unlimited 2004; Quigley and Arbelbide 1997; Western Native Trout Campaign 2001), especially in combination with other impacts such as livestock grazing (Al- Chockhachy et al. 2010b). Since an adaptive management framework is ostensibly being followed by the USFS, it would seem that the agency would continue to implement PACFISH/INFISH and it's successful strategies—i.e., the strong and enforceable quantitative protections for water quality parameters and riparian habitat conditions (RMOs)-- in order to continue upward trends towards ongoing recovery. If anything, quantitative enforceable standards for water quality parameters and riparian habitat conditions should be strengthened to improve recovery trends for hydrologic processes and to ensure long-term successful recovery for sensitive aquatic species and riparian habitats. Unfortunately, the standards, guidelines, and desired conditions proposed in the BMFPR as replacements for PACFISH/INFISH provide *less* protection rather than more. The decision to abandon PACFISH/INFISH, and the underlying standards and RMOs that have made PACFISH/INFISH successful, is arbitrary and capricious. Additional focus is clearly needed regarding recovery of stream morphology, culvert and fish passage barrier repairs, road decommissioning and obliteration, and other similar non-silvicultural restorative actions in order to address the issues that need more recovery as identified by the BMFPR.

Problems with extremely subjective, unenforceable, undefined or un-definable language in the desired conditions, standards, guidelines, and objectives proposed throughout the BMFPR and ARCS are the same or similar to those described above for TM-1S and RMA-1S. Examples of problematic language is bolded in the example standards and guidelines below; a short explanation of why language is problematic is below each example. The examples are representative of recurrent issues such as: subjective, voluntary, and unenforceable direction even within standards; standards with additional strength and enforceability are needed instead of the proposed guidelines or very weak/subjective/unenforceable standards; and lack of quantified RMOs. These examples are not exhaustive and do not include all problems within standards, guidelines, or desired conditions; they are simply representations of pervasive problems throughout the BMFPR and ARCS:

> **TM-3G** Use of existing or construction of new landings, designated skid trails, staging, and decking should not occur in riparian management areas, **unless they are associated with projects designed to improve riparian management areas conditions.** These features should: • be of minimum size, • be located outside the active floodplain, and • **avoid negative effects** to large wood, bank integrity, temperature, and sediment levels.
>
> > Should be a standard; management area "conditions" is not defined or quantified, and could refer to a wide variety of extremely subjective conditions. This does not allow for larger-scale protection of water quality parameters or the instream habitat needs of native and ESA-listed fish.
>
> **TM-4G** Yarding activities should achieve full suspension over the active channel; **unless other alternatives will have less damage to riparian areas and stream channels.**
>
> > Should be a standard; not clear what sort of parameters or damage would constitute "less damage" (i.e., "less damage to riparian area and stream channels" could result in a prioritizing less ecologically important resources over other more important ones. Without clear prioritization and quantification of which parameters and conditions to protect, this is an extremely subjective and unclear guideline.
>
> TM-5S Silvicultural practices shall include provisions, **as appropriate, to avoid detrimental changes** in water temperatures, blockages of water courses; including protection for streams, stream banks, shorelines, lakes, wetlands, and other bodies of water, and deposits of sediment.

> "As appropriate" and "to avoid" should be deleted. "To avoid" should be replaced with "shall not cause". Standard should include quantified RMOs for the parameters listed including water temperatures, streambanks, sediments, etc. Without RMOs with quantified standards for protection, "detrimental changes" is very difficult to interpret or enforce.

TM-7S Timber harvest on lands not suitable for timber production shall occur only to meet **desired conditions** for each management area other than timber production.

> "Desired conditions" are almost entirely subjective, lack any timeframe for attainment, and do not have any mechanisms for enforcement, transparency, or accountability. They will not protect water quality parameters, instream habitat conditions, or native or at-risk aquatic species viability.

TM-8G In watersheds in which stream channels and aquatic habitats are in properly functioning condition, forest vegetation within riparian management areas **should** be managed to maintain or increase large wood recruitment and delivery to streams.

> Large wood recruitment and delivery to streams is a crucial cornerstone of ecological integrity for streams, essential for the viability of many native and ESA-listed aquatic species, and a driving force of recovery for stream morphology. This guideline needs to be a standard. Delete "should" and replace "shall".

RMA-2S Herbicides, insecticides, pesticides and other toxicants, and other chemicals shall be applied only to maintain, protect, or enhance **aquatic and riparian resources or to restore native plant communities in a manner that does not harm aquatic or riparian resources.**

> Herbicides, insecticides, pesticides, and other toxicants, and other chemicals should not be used in riparian corridors or near waterways. "Enhancing aquatic and riparian resources" and "in a manner that does not harm aquatic or riparian resources" is very subjective.

RMA-4G Water drafting sites **should** be located and managed to **minimize adverse effects** on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat. To prevent the spread of invasive species, water **should not** be discharged into other water bodies.

> Should be a standard. Should contain quantified RMOs to protect against degradation of water quality parameters and instream habitats, including sedimentation and others. Delete "should not" and replace with "shall."

RMA-6G Fish habitat and water quality should be protected when withdrawing water for administrative purposes.

Should be a standard, and include “shall” instead of “should”.

GM-1S Manage livestock grazing **to attain aquatic and riparian desired conditions**. Where livestock grazing is found to prevent or retard attaining aquatic and riparian **desired conditions**, modify grazing practices (such as number of livestock, timing, and physical structures). **If adjusting practices is not effective,** remove livestock from that area using appropriate administrative authorities and procedures.

Attaining desired conditions is extremely subjective, highly variable and difficult to determine, lacks prioritization of water quality parameters or instream habitat conditions over less pervasive or threatening perceived problems (such as vegetation composition), lacks quantification or enforcement mechanisms, etc. Its not clear how it will be determined whether or not adjusting practices will be considered “effective”, for similar reasons described above.

GM-2S New livestock handling and/or management facilities shall be located outside riparian management areas **unless they do not prevent or retard attaining aquatic and riparian desired conditions.**

“Desired conditions” are problematic for reasons discussed above.

GM-4G During allotment management planning, existing livestock handling or management facilities that **prevent or retard attaining aquatic and riparian desired conditions should be removed, as appropriate.**

Should be a standard. “Desired conditions” are problematic for reasons discussed above. “As appropriate” makes this guideline extremely subjective and unenforceable.

GM-5G Livestock trailing, watering, loading, and other handling in riparian management areas **should** be avoided or minimized.

Should be a standard; replace “should” with “shall”.

GM-6S Livestock grazing shall be managed and implemented **to avoid** trampling federally listed threatened or endangered fish redds.

Should be strengthened to not allow trampling of redds, not just to “avoid” trampling of redds. Ex: livestock grazing management shall no allow for trampling of federally listed threatened or endangered fish redds.

RF-1G New roads and trails should not be constructed within riparian management areas **unless no other feasible alternative exists.**

Delete “unless no other feasible alternative exists”. Should be a standard.

RF-2G Temporary roads, including stream crossings, in riparian management areas **should be minimized.** Temporary roads, **if constructed, should be managed to protect and restore aquatic and riparian desired conditions**.

> "Temporary" roads and stream crossings should not be built in riparian management under any circumstances. The out of control road system is already the most pervasive and direct ecological threat to water quality and instream habitats on the forests. No new roads should be built, especially not in riparian areas where they are most likely to damage water quality and riparian habitats. "Desired conditions" is problematic for reasons discussed above.

II. As a Guideline Rather than a Standard, GM-3G Will Not Adequately Protect Riparian Areas from Livestock

Under PACFISH and INFISH, riparian management objectives provided quantitative measures of stream health attributes that are affected by livestock grazing, including bank stability, water temperature, and width-to-depth ratio. Under the ARCS, RMOs are replaced by qualitative desired conditions. Accordingly, for grazing, only plan components like management standards and guidelines can now provide measurable livestock use criteria such as percentage of bank alteration and vegetation utilization and stubble height. *See e.g.*, W-W LRMP at 5–7 (explaining role of different plan components). Under the ARCS, these are found in the grazing management Guideline GM-3G. ARCS at 46–48.

Under the Wallowa-Whitman, Malheur, and Umatilla plans, both standards and guidelines are established to help achieve desired conditions. *Id*. However, while "standards are mandatory constraints upon project and activity decisionmaking," guidelines "allow for departure from its terms" and "provide flexibility in defining compliance." *Id*. at 6.

Consequently, as components of a guideline rather than a standard, the stubble height, bank alteration, and herbaceous and woody utilization limits in GM-3G are not enforceable. *See W. Watersheds Proj. v. Bennett,* 392 F. Supp. 2d 1217, 1227 (D. Idaho 2005); *W. Watersheds Proj. v. Interior*, No. 08-0506-E-BLW, 2009 WL 5218020, at *9 (December 30, 2009) (discussing the difference between mandatory, enforceable land use plan standards, and other discretionary provisions like guidelines). Therefore, Guideline GM-3G provides neither certainty in meeting desired conditions, or certainty in improving or maintaining habitat for salmonids and other species. *See W. Watersheds Proj. v. Salazar*, 843 F. Supp. 2d 1105, 1129 (D. Idaho 2012) (explaining how non-mandatory stubble height, stream bank alteration, riparian browse, and utilization measurements provided BLM "nearly unreviewable discretion to waive off failures to comply").

Because under Standard GM-1S, livestock grazing must be managed to attain desired conditions, the Forest Service must change GM-3G from a guideline to a mandatory standard.

The EPA expressed concerns about proposed grazing in relation to riparian areas. The ROD explains, in relation to concerns raised by EPA that the "EPA also recommended the revised land management plan incorporate the grazing utilization rates and residual stubble heights for riparian areas as for Alternative F, because the EPA believes these rates would result in higher rates of animal rotation." In response to the EPA's concerns, the ROD states that the "revised land management plans include guideline GM-3G, which establishes stubble heights and grazing utilization rates that are generally the same as with Alternative F. Stubble heights and utilization rates would vary according to whether or not desired conditions have been attained. Guideline GM-3G prescribes more conservative stubble heights and utilization rates **where desired conditions have not been attained to foster attainment of desired conditions"** (emphasis added). Rather than including a clear and enforceable standard to protect riparian areas, the USFS has chosen to propose an extremely subjective and difficult to enforce guideline. "Desired conditions" as defined by the USFS are, in themselves, a very complex, vague, and subjective set of conditions with no quantitative standards. Suggesting that these already subjective and unenforceable conditions are then only selectively applicable under similarly subjective and ill-defined criteria makes enforcement of such guidelines impractical and unlikely.

In addition, the desired condition, standards, and guidelines for livestock grazing in relation to riparian areas allows for extensive streambed degradation and extremely heavy use of forage. The GM-3G standards includes "[u]tilization of "30-45 percent of deep-rooted herbaceous vegetation in the active floodplain and, as needed, in other critical portions of the riparian management area". This is a huge portion of the deep-rooted vegetation within riparian corridors, and will not protect aquatic and riparian ecosystem integrity, water quality, or native aquatic and riparian species including at-risk and ESA listed species. Similarly, the guideline allows for up to 20-25 percent streambank alteration, which is a huge percentage of streambank damage to allow. Where is the evidence that this does not cause significant, long-term, and negative impacts? In general, the paltry science the BMFPR cited is very old, and does not represent the full compliment of best available science. While utilization and streambank alteration guidelines are slightly lower if these area is deemed to not be attaining desired conditions (what this means is entirely unclear) The USFS failed to disclose or analyze the full range of best available science to show that such widespread and heavy livestock use does not cause negative population trends or loss of viability for native or ESA-listed aquatic or riparian species, violations of the CWA, irreparable degradation of riparian ecosystems. Stubble height should be, at a minimum, an enforceable, clear, and consistent standard of 6". The stated purpose of the GM-3G guideline is "to manage livestock grazing to help attain and maintain aquatic and riparian desired conditions over time. Specifically, it is intended to maintain or improve vegetative and stream conditions, help ensure the viability of aquatic species, provide important contributions to the recovery of federally listed species, and facilitate attainment of State water quality standards". However, the BMFPR then goes on to note that indicators are only applied "over longer timeframes" to attain "desired conditions". Desired conditions are almost entirely subjective, unclear, and lack mechanisms to ensure that parameters such as water quality and instream habitat conditions are protected. Furthermore, the guideline then goes on to state that "[o]nly those indicators and numeric values that are appropriate to the site and necessary for maintaining or moving towards desired conditions should be applied" and that "[s]pecific indicators and indicator values should be prescribed and adjusted, if needed, in a manner that reflects existing and desired conditions and the natural potential of the specific geoclimatic, hydrologic and vegetative setting in which they are being applied. Indicators and indicator values should be adapted over time based on long-term monitoring and evaluation of conditions and trends". In effect, it will often become almost impossible to determine when, where, and how to implement this already weak and subjective guideline. In addition, the transparency and accountability regarding implementation would become almost impossible to enforce. Exacerbating the subjective, unenforceable nature of this guideline, the BMFPR goes on to put in a footnote that: "[n]ot all indicators may apply to a particular site. For example, stubble height is a meaningful indicator for lower gradient streams where herbaceous vegetation plays an important role in stabilizing streambanks. It is generally less useful for steeper channels, where channel morphology is controlled by coarse substrates. Moreover, not all numeric values may apply to a particular site (e.g., sites with short graminoids)". And "[i]ndicator values for specific sites should be determined based on consideration of local conditions including, but not limited to, the degree of departure between existing and desired conditions, the current and desired rate of improvement, site sensitivity to grazing, grazing season, the presence of special status species (e.g., federally listed species, Regional Forester's sensitive species) that are sensitive to grazing, whether or not water quality standards and related requirements (e.g., total maximum daily loads for impaired waters) are being met, and the site's importance in maintaining or attaining those standards and requirements. Consideration of these conditions is especially important in prescribing specific stubble height values within the 4- to 6-inches range and streambank alteration values within the 15 to 20 percent range." "Assessment of conditions and trends should be based on best available information at a variety of spatial and temporal scales. Site-specific information is particularly important." It is utterly unacceptable to create such a murky and difficult to determine pathway even this very weak guideline.

No grazing should occur within RMAs and within subwatersheds with ESA-listed fish, particularly Bull trout. Such protections are needed to ensure the viability of Bull trout and other ESA-listed fish and aquatic species (ESA). No grazing should occur for five or more years after wildfire. These protections, as discusses in Alternative C, should be included in the final decision.

The NEPA analyses in the BMFRP is unclear as to whether multiple versions or developments of the ARCS are being used in the BMFPR. For example (FEIS Vol. 1, Chap. 3, pg. 147): "The 2018 Blue Mountains ARCS was also modified from the 2008 Regional ARCS to include updated riparian area grazing guidelines. The grazing guidelines were finalized in late 2017 using the iterative NEPA process between several cooperating county commissioners within the Blue Mountains national forests, the U.S. Fish and Wildlife Service, National Marine Fisheries and Forest Service decisionmakers". Also, was this process that finalized grazing guidelines in 2017 open to the public, beyond other agencies and county commissioners? We were not given notice. It seems that this process did not include broad public review and excluded key portions of the public (Tribes, scientists outside of agencies mentioned, environmental groups, etc.).

As far as BMBP has been able to determine, bank angle has not been regularly surveyed across the National Forests in the Blue Mountains. Has bank angle actually been monitored as it should have been according to PACFISH/INFISH? This parameter is repeatedly omitted in almost all of the tables/figures showing actual data in timber sale documents, and is only briefly discussed in the BMFPR.

The desired conditions for riparian functions across the BMFPR's Forest Plans encompass such large variations in conditions as to be unenforceable and practically meaningless. Additional examples of extremely subjective desired conditions in Malheur Forest Plan include the following, with problematic language that renders them overly subjective or unenforceable highlighted in bold (most examples from pgs. 29-30):

- "Achieving desired conditions **will vary in both time and scale. Some desired conditions may be achievable over a long timeframe (over 20 years, and in some cases, over 100 years);** whereas, in other cases the desired condition already matches the current condition, and the desire is to maintain it. Some desired conditions apply at the forestwide scale, while others apply at a subbasin, watershed, subwatershed, or management area scale. **Desired conditions are timeless in that there is no specific date by which they are to be completed. The expectation is that the Malheur National Forest staff will make progress toward achieving desired conditions but some desired conditions may not be achieved during the life of the Plan"**.
- "Desired Condition: The species composition and structural diversity of native plant communities in riparian management areas, including wetlands, **provides adequate** side channels, pools, undercut banks, and unembedded substrates. These conditions **result in a variety of depths, gradients, velocities, and structures** for seasonal thermal regulation, nutrient filtering, appropriate rates of erosion, and channel migration, as well as **supplies amounts and distributions** of coarse woody debris and fine particulate organic matter **sufficient to sustain** physical complexity and stability."
- "Desired Condition: Riparian management areas within any given watershed reflect a natural composition of native flora and fauna and a distribution of physical, chemical, and biological conditions **appropriate to natural disturbance regimes affecting the area.**"
- "Desired Condition: Key riparian processes and conditions (including slope stability and associated vegetative root strength, bank stability, wood delivery to streams, and within the riparian management areas, input of leafy and organic matter to aquatic and terrestrial systems, solar shading, microclimate, and water quality) **are operating consistent with local disturbance regimes**."
- "Desired Condition: The potential for large wood recruitment to streams from within forested riparian areas, and from low-order streams to higher order streams **is similar to the potential** in reference watersheds with similar forest vegetation types."

"Adequate" is an extremely subjective term in an ecological context, and could easily be interpreted in such a way as to result in the agency managing at the bottom margins of functionality. "Adequate" certainly does not provide for enforceability, transparency, or accountability, much less robust protections for water quality and aquatic species. A "variety" of the discussed stream characteristics is similarly subjective and almost impossible to define in concrete terms, as are the terms or phrases "[s]upplies amounts and distributions" "sufficient to sustain". What "amounts"? What constitutes "sufficient"? Such vague, subjective, and unenforceable language is a consistent problem throughout proposed desired conditions in the BMFPR.

III. The Failure to Consider Classifying Vacant Grazing Allotments as Unavailable to Grazing Violates NEPA

Throughout the FEIS, the Forest Service denies its authority to make grazing allotments that are currently available for grazing but are vacant (have no current permit issued) unavailable for grazing under the revised forest plans. Accordingly, it declines to consider making vacant allotments unavailable, and in fact, proposes to make all currently vacant allotments available to grazing pending site-specific NEPA analysis.

However, an alternative that would close vacant allotments for the life of the forest plans is reasonable and, consequently, the Forest Service's failure to consider it violates NEPA. First, contrary to the Forest Service's claims that it only makes livestock grazing use decisions at the allotment (project or site-specific) level, forest planning is the obvious time and place to make broad-scale decisions about which areas within the forest are subject to grazing. The Forest Service appears to have done this only through their suitability analysis by including suitable acres within vacant allotments in total suitable acres for the forest. But the Forest Service declined to consider whether vacant allotments as a whole should continue to be grazed under the new plans, regardless of how many suitable acres they contained and did not determine that any allotments should be closed under the plan because they were not in use.

The Forest Service also states that it cannot make an allotment unavailable for grazing without NEPA. However, this is not the case. Unlike the issuance of a grazing permit, or annual operating instructions, which are affirmative agency actions, subject to environmental analysis, *see Idaho Watersheds Proj. v. Hahn*, 307 F.3d 815, 828 (9th Cir. 2002); *Or. Natural Desert Ass'n v. U.S. Forest Serv.*, 465 F.3d 977, 983 (9th Cir. 2006), if the Forest Service declines to issue a grazing permit, it takes no action at all. Likewise, classifying lands as unavailable for grazing in a land use plan does not actually commit resources; thus, no NEPA analysis is required. *See Friends of Yosemite Valley v. Norton*, 348 F.3d 789, 800 (9th Cir. 2003); *N. Alaska Envtl. Ctr. v. Kempthorne*, 457 F.3d 969, 976 (9th Cir. 2006) (NEPA is required prior to irretrievable commitment of resources). And even if NEPA was required to "close" vacant grazing allotments through a plan revision, the Forest Service here has issued an environmental impact statement, and should have considered such an alternative in the current process.

Proposed Resolutions:

- The Forest Service should institute protections from logging/vegetation management and grazing that are at least as protective as PACFISH/INFISH standards

In addition, in order to ensure ecosystem integrity in aquatic and riparian ecosystems:

- BMFPR "desired conditions", guidelines, and objectives ostensibly meant to provide key protections for aquatic and riparian ecosystems should be replaced with standards that are clear, quantitative, enforceable, not voluntary, and not subjective.
- No vacant allotments should be considered for reopening
- Wildfires should be allowed to burn, especially in wilderness, IRA, backcountry areas
- Disturbances such as insects and disease must be allowed to play their native roles, especially within riparian habitats
- Lack of standards for downed wood/snags a major concern, especially in riparian areas

  - Snag and dead wood flushes needed; dead wood should not be managed at the bottom margins of ecological and biological necessity
- More protections needed for nest and cavity trees
- More protections needed for wildlife and birds especially in RMAs.
  - Additional standards and protections needed for elk, wolves, goshawk, marten, fisher, lynx, wolverine, Preble's shrew, and others.
- In order to protect terrestrial and aquatic species and their ecosystems, particularly in the face of climate change, standards for old forests, large trees, and wildlife habitat within and outside of RMAs must be strengthened. PACFISH/INFISH and current Forest Plan protections and designations should be kept and strengthened, rather than abandoned.
- Large trees should be protected in order to ensure sufficient snags and down wood in streamside corridors, and large wood in streams. Future recruitment must be ensured, too. The prohibition on logging large trees > or = trees 21" dbh should be preserved.
- Wetlands, springs, seeps, and ground water dependent ecosystems need much stronger protections.
- Soils need significantly additional protections in the form of stronger standards.
- Stronger protections/standards needed for special status and ESA-listed plants such as Spaldings catchfly, moonworts, especially in riparian areas. Currently insufficient protections from logging, roads, grazing, mining, other management (MNF FP pg. 145).
- No herbicides should be used within RMAs
- Much stronger standards needed to prevent establishment and spread of invasive plants, greater emphasis needed on prevention
- Scientific consensus that "salvage logging" is horrible for water quality. Should at the very least not occur in or near RMAs, or in subwatersheds with Bull trout or other ESA-listed aquatic species.
- After wildfire, re-vegetation should be allowed to occur naturally after wildfires
- More standards that have strong, quantifiable, non-voluntary or subjective direction are needed to protect wildlife and wildlife habitat re: prescribed fire
  - No post-fire logging should occur in prescribed burns gone awry

II. NFMA and Planning Regulations

The 1982 rule part 219.19 states that "[f]ish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area" (Federal Registrar 2012, 36 CFR Part 219). The proposed BMFPR does not adequately provide for the use of MIS species, population or distribution surveys, or for coordination with USFWS and other relevant agencies to assist with or improve surveys in order to assess species' trends and status or inform management decisions.

The BMFPR provides confusing language and analyses regarding alternative choice of which planning regulations it is following, and appears to cherry pick between the 1982 and 2012 planning regulations._**We remain concerned that the USFS will not fulfill its obligations to survey or monitor for MIS species or others (see our previous DEIS comments, which remain relevant).** The BMFPR's abandonment of designated Management Areas for Designated

Old Growth forests, core habitats, and connectivity corridors is contrary to Planning Regulations for protecting these resources. The abandonment of these designations puts the viability of ESA-listed species and native species at risk, and will degrade biodiversity and water quality. This direction also runs contrary to generally recognized strategies to mitigate the negative ecological effects of climate change.

The modification to one of the "E" Alternatives in order to log at an unsustainable level (MNF FP Table 33, pg. 129), in violation of NFMA, is highly concerning and problematic, and would cause a boom bust economic cycle as well as massive ecological destruction. In addition, the large amount of expected sawtimber volume expected in first decade for lands not suitable for timber production across alternatives is extremely problematic.

BMFPR classification of ecologically and geologically sensitive lands and scenic areas suitable for "timber harvest" and, in some areas, new road construction is extremely problematic. For example, areas designated as WSRs (MA 2A), Botanical Areas (MA 2C); Geological Areas (MA 2D); Scenic Byways and All-American Roads (MA 2F); Nationally Designated Trails (MA 2G); Scenic Areas (MA 2H); Backcoutry (MA 3A, MA 3B); RMAs (MA 4B), are also deemed "suitable" for "timber harvest" (BMFPR MNF Plan Table 31, pg. 124). Mechanical fuel treatment is also allowed in many of these areas.

Aquatic species as management indicator species (MIS)

The proposed BMFPR does not fulfill the 1982 Planning Rule requirements for the use of MIS in Forest Plans. The BMFPR does not include aquatic MIS and so would not help to manage aquatic habitats or inform management decisions about aquatic species or their habitats in relation to land management activites.

Logging, mining, grazing, and other land management activities that take place on national forest lands are known to cause adverse impacts to Bull trout as well as to other listed fish and aquatic species. The FS claims that they have little control over the viability of anadromous fish, native resident fish, or Bull trout, due to dams, private lands management, harvest, and other factors outside of FS control. While these outside factors most certainly contribute significantly to threats faced by listed fish, the Forest Service manages much of the land in core and critical habitats for spawning and rearing for numerous listed fish species. Spawning and rearing habitat quality is a primary limiting factor in the continued viability of these species. The Biological Opinion for the Effects to Listed Species from Operations of the Federal Columbia River Power System (USFWS 2000) states that: "[l]and and water uses that alter or disrupt any of the habitat requirements identified above can threaten bull trout. Examples of activities that have altered or disrupted habitats include: water diversions, dams, timber extraction, mining, grazing, agriculture, introduction of non-native fishes that compete or hybridize with bull trout, poaching, past fish eradication projects, and channelization of streams. These threats are prevalent throughout the Columbia River basin, **except in wilderness areas**" (emphasis added). However, the proposed FPR consistently downplays and/or fails to identify threats to Bull trout viability due to land management actions on National Forest lands, as well as threats to Redband and other at-risk fish species.

Additional evidence that FS actions do indeed make a difference to the viability of these fish stocks is that their populations are documented by numerous studies and agencies to be substantially stronger in wilderness areas as opposed to managed areas, and in areas of low road densities, including on public/federal lands (this is discussed more extensively in the need for wilderness section of our aquatic comments). FS land management activities do affect anadromous and resident fish populations in a significant, documentable manner that has important consequences for long-term trends and continued viability. The FS must take responsibility for their part in the continued viability of fish that use key habitats on national forest lands, rather than downplaying and refusing to acknowledge the impacts from FS management on Bull trout and other listed fish. In addition, the majority of Bull trout distribution within the vicinity of the three national forests lies within National Forest Boundaries. Bull trout, Redband trout, and other at-risk and listed fish make excellent candidates for Management Indicator Species because they are sensitive to land management actions on NF lands and show measurable responses to differing levels of management (for example, road densities). They should be seriously analyzed and considered as MIS in the alternatives of the proposed BMFPR.

The BMFPR rejected the continued use of fish species as management indicator species, including those species that are currently used as MIS. Redband trout, Bull trout, other resident fish stocks, and anadromous fish stocks that use National Forest lands for spawning, rearing, or migrating, do indeed respond to Forest Service management in a documented and measurable manner, have habitat needs that if fulfilled would serve as umbrella protection important ecological habitats contribute to overall ecological health, and are appropriate management indicator species. While potential MIS fish are also affected by influences and impacts outside of NF control, that does not diminish the fact that management activities on National Forest lands do have important and significant impacts on the population trends and viability of fish utilizing National Forest lands, including current management indicator species, many of which are listed.

Logging, grazing, and other land management activities are common on the Malheur, Umatilla, and Wallowa-Whitman National Forests in areas outside of wilderness, including in high elevation areas and areas with Bull trout spawning and rearing use. See Figures 1-7 for Google satellite images showing just a few of the many examples of logging on these three national forests adjacent to and upstream of Bull trout distributions. The Forest Service is correct that much of the spawning and rearing habitat for Bull trout is located primarily in wilderness and in areas of low road density, and research shows that the strongest and healthiest stocks are in wilderness and unroaded areas. However, this is an effect of land management on Bull trout in National Forest lands, and is due in large part to habitat degradation in non-Wilderness areas that would otherwise be available for Bull trout use (as evidenced by the extreme reduction in Bull trout occupancy compared to their historic range). The USFWS (2010) goes to great lengths to justify why all of the core habitat designations are necessary to the continued viability of Bull trout. Many of the core habitats designated by the USFWS on these three national forests are not in Wilderness areas, and overlap greatly with timber management, grazing allotments, and other land uses on National Forest lands. In addition, foraging and migration use for Bull trout is also important, needs to be addressed and provided for, and also overlaps greatly with timber harvest, grazing, and other management activities on National Forest lands. The FS needs to adequately address management impacts to these core areas. Using Bull trout as MIS would deepen the understanding of how Bull trout populations are affected by different types of management, allow for adaptive management, and help to protect Bull trout and other aquatic species from negative impacts of land management. Using Bull trout as a MIS would help to protect a suite of aquatic habitats that contribute to overall stream health, increase habitat quality for a number of species that rely on healthy stream attributes such as very cold water, clean gravels, and complex stream structure- attributes which Bull trout rely upon.

The proposed BMFPR dismisses the use of anadromous Steelhead and Spring Chinook as continued management indicator species due to the outside influences and negative impacts beyond NF boundaries faced by these species. However, anadromous fish in the interior Columbia basin also have stronger stocks and healthier population numbers in areas of minimal or no human management and in areas of low road densities, including on NF lands, clearly showing a documentable response to management actions on NF lands. Anadromous fish on the three national forests also have distributions that greatly overlap with land management activities on NF lands. We recommend that all species that are currently MIS species should be continued as such in the future, and that the Forest Service needs to include and seriously analyze the use of these fish as MIS in alternatives within the BMFPR.

The Malheur National Forest Plan under the BMFPR states (pg. 36): "Under the 2012 Planning Rule, focal species have replaced management indicator species for monitoring in Forest Plans". However, this seems to be a confusing and inappropriate cherry-picking of 2012 Planning Rules, versus the 1982 Planning Rules which the BMFPR is planned under and obliged to comply with.

The proposed FPR (Vol. 2, Chap. 3, pg. 94) states that "[r]edband and bull trout serve as focal species surrogates for westslope cutthroat trout and margined sculpin, and cumulative effects of the alternatives on these species constitute the cumulative effects analysis for redband trout, westslope cutthroat trout and margined sculpin as sensitive species. There would be no cumulative trends towards Federal listing for these species from management actions for any of the alternatives." However, we are concerned that due to unacceptably high road densities (at levels which result in watersheds that are not properly functioning), insufficient road density reductions (in varying degrees for different alternatives), and varying degrees of impacts and protections from cattle and timber harvest that many if not all of the alternatives would result in Federal listing for at-risk species, and continued levels of unsustainable threats for already listed species. For example, average existing road densities currently exceed thresholds for functioning watersheds in all three national forests (i.e., they are not properly functioning). These highly roaded areas have documented and negative effects on fish stock strength and distributions. The different alternatives have varying degrees of road closures, and none of the alternatives have standards, guidelines, clear goals, or requirements for road decommissioning/obliteration. If road densities are not reduced to below thresholds for putting aquatic species at risk, then this will most certainly contribute to a possible cumulative trend towards Federal listing due to management decisions and differences within the alternatives. It will also continue to contribute to population declines in listed species, including those that are already considered to be not viable, have declining populations, and at risk of extirpation due to genetic drift.

Using Redband and Bull trout as focal species surrogates for westslope cutthroat trout and margined sculpin is problematic, as is the use of focal species as a stand-alone strategy and/or in place of MIS use. The use of Management Indicator Species facilitates a deeper understanding of population dynamics and trends, and how species are affected by their habitats. The FS claims that these connections are not attainable through the use of MIS. However, population trends and strongholds on National Forest lands with differing management suggest otherwise (see the discussion of Bull trout below in our DEIS comments on the BMFPR for more detail on these issues. These DEIS comments remain relevant to the FEIS). In addition, the use of a surrogate species to represent the trends of another species is scientifically controversial. Redband and Bull trout are likely to have differing habitat needs from those of Westslope cutthroat trout and Margined sculpin (even subtle differences can be important). While some of these species' habitat needs may overlap, there may be other needs that if not managed for will contribute to downwards trends for those species. Population and distribution surveys are essential for informing management decisions, and for accurately assessing trends, species' needs, and potential viability. The FS should work with NMFS, USFWS, and ODFW in order to improve survey protocols and standardize data collection methods for at risk and listed species. We do not support focal species as a stand-alone strategy and/or in place of MIS use, and we are unclear as to why the FS proposes using Redband and Bull trout as a surrogate for Westslope cutthroat and Margined sculpin when it is suggested that using surrogate species as a proxy for other species' health or strength is, at least in part, the FS justification for why MIS use is inappropriate.

The Google earth satellite images below show management activities adjacent to or downstream of Bull trout distributions. We disagree with the FS conclusion in the proposed FPR that Bull trout are not appropriate MIS species in part because there is little FS management activity on NF lands in watersheds containing Bull trout.

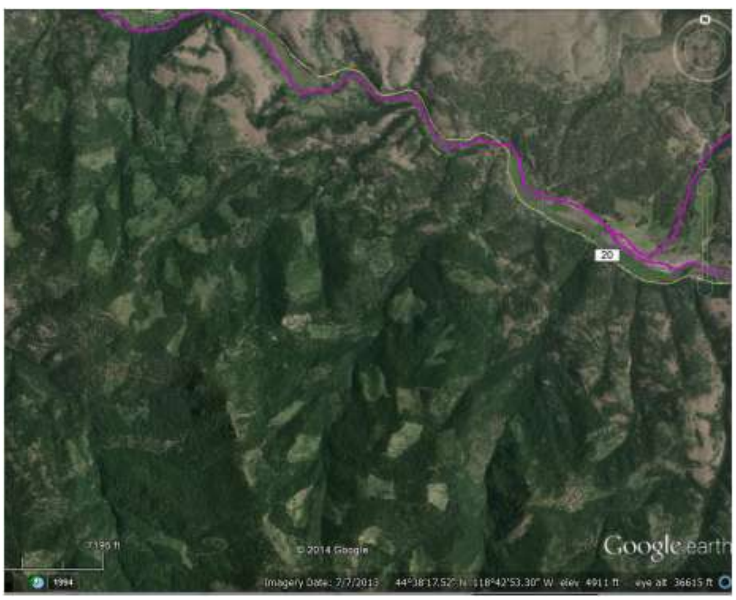

Figure 1: Middle Fork of the John Day and small portion of Granite Creek, Malheur NF. Logging in areas upstream of Bull trout distribution are clearly visible. Bull trout distribution is shown in purple and includes rearing and migration as well as spawning and rearing. Data sources: Google Earth, ODFW and Streamnet, accessed online 7/2014 at: http://www.wildtroutstreams.com/

Figure 2: Clear and Reynolds Creeks, Malheur NF, with logging visible adjacent and upstream of Bull trout distribution that includes spawning and rearing habitat. Bull trout distribution is shown in purple and includes rearing and migration as well as spawning and rearing. Data sources: Google Earth, ODFW and Streamnet, accessed online 7/2014 at: http://www.wildtroutstreams.com/

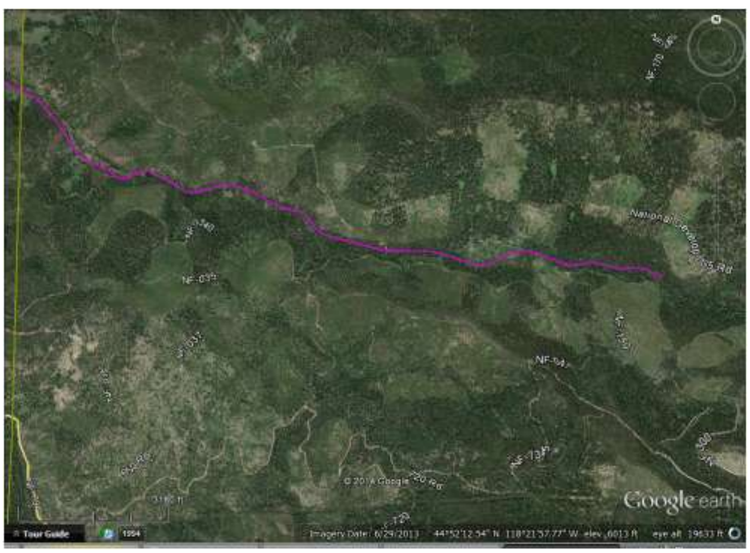

Figure 3: Crane Creek, trib to N Fork John Day, Umatilla NF and includes logging in and adjacent to streams with Bull trout. Bull trout distribution is shown in purple and includes rearing and migration as well as spawning and rearing. Data sources: Google Earth, ODFW and Streamnet, accessed online 7/2014 at: http://www.wildtroutstreams.com/

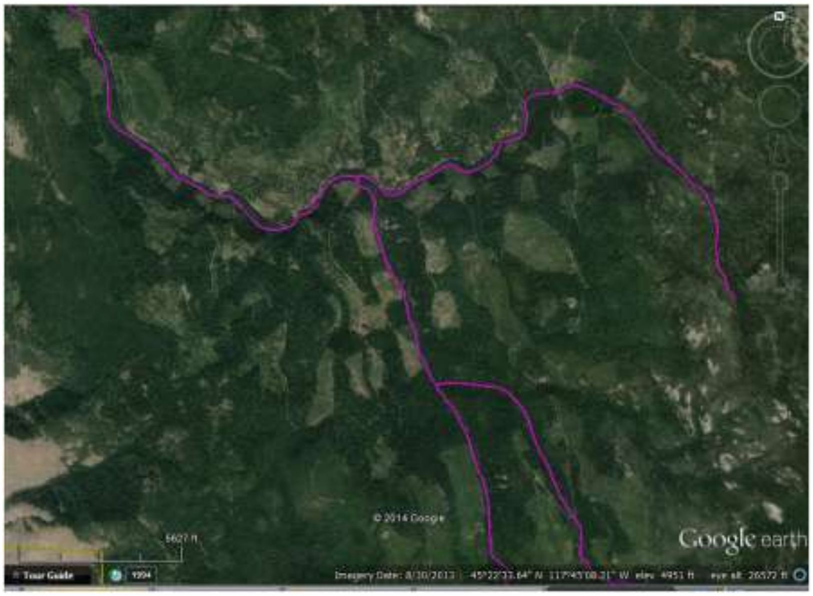

Figure 4: Camp and Indian Creeks in Wallowa-Whitman National Forest, shows logging in and adjacent to streams with Bull trout. Bull trout distribution is shown in purple and includes rearing and migration as well as spawning and rearing. Data sources: Google Earth, ODFW and Streamnet, accessed online 7/2014 at: http://www.wildtroutstreams.com/

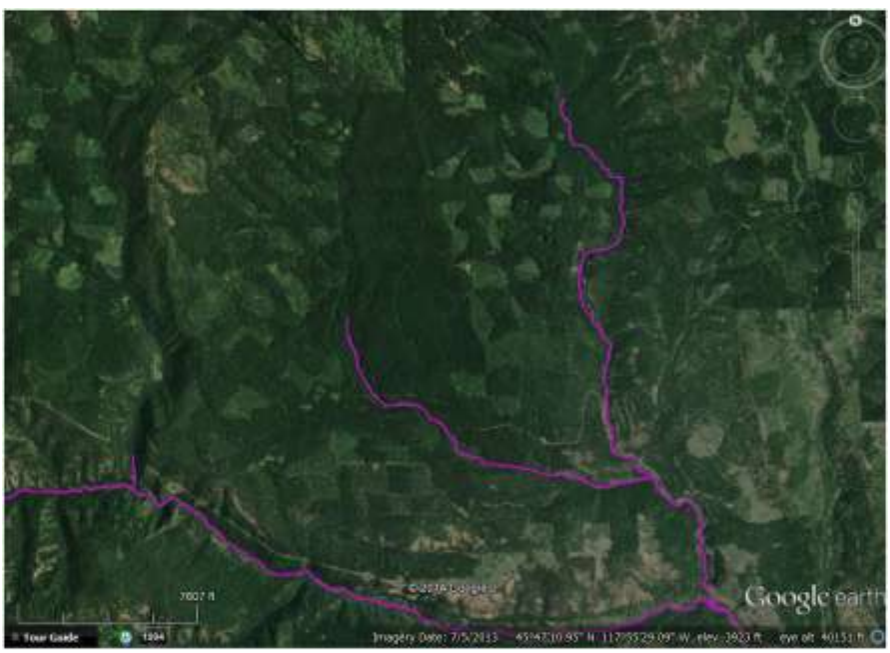

Figure 5: Mottet, Looking Glass, and Little Looking Glass Creeks, Umatilla National Forest. Bull trout spawning and rearing. The logging shown in and above the mid and upper reaches of Bull trout distribution in streams is on Forest Service land; the area surrounding the stream confluences to the SE is on private land. Bull trout distribution is shown in purple and includes rearing and migration as well as spawning and rearing. Data sources: Google Earth, ODFW and Streamnet, accessed online 7/2014 at: http://www.wildtroutstreams.com/

Figure 6: Wenaha River, Umatilla NF. The timber harvest and Bull trout distribution is on the Umatilla National Forest. Some private land in the NE and SE corners of this screen shot (boundary shown by yellow lines). Bull trout distribution is shown in purple and includes rearing and migration as well as spawning and rearing. Data sources: Google Earth, ODFW and Streamnet, accessed online 7/2014 at: http://www.wildtroutstreams.com/

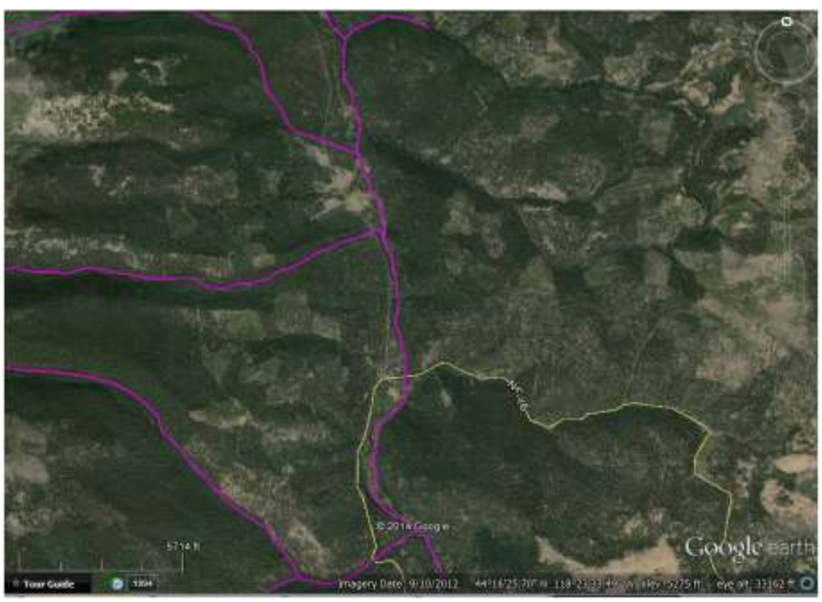

Figure 7: Sheep, Elk, and Swamp Creeks, and the N Fork of the Malheur River, Malheur National Forest. Shows logging in and adjacent to streams with Bull trout. Bull trout distribution is shown in purple and includes rearing and migration as well as spawning and rearing. Data sources: Google Earth, ODFW and Streamnet, accessed online 7/2014 at: http://www.wildtroutstreams.com/

Proposed Resolution:

- Preserve and strengthen use of aquatic and riparian MIS species
- Withdraw the FEIS and Forest Plans, or rework in a SEIS, in order to consistently comply with the 1982 Planning Regulations, and to provide clear NEPA analyses for public review
- Include surveying and monitoring plans that provide for understanding the response of aquatic species to logging, grazing, and other management actions. Plans should be sufficiently robust to provide a strong adaptive management framework.
- Do away with cherry-picking of which Planning Regulations are being followed and the unclear and confusing NEPA regarding this issue.

III. Endangered Species Act (ESA)

Abandonment of RMOs and PACFISH/INFISH and RMOs, as well as the loss of quantitative and enforceable standards will not protect ESA-listed aquatic and riparian species or their habitats during the implementation of the BMFPR. The increase pace and scale of logging; abandonment of designated old forest management areas, designated wildlife corridors, 21" dbh limit on logging large trees; and abandonment of aquatic MIS will cause significant detrimental negative effects to ESA-listed species and their designated habitats. The BMFPR does not contain any mechanisms to ensure that possible detrimental effects will not be long-term, result in the loss of viability for at-risk and ESA-listed species, or cause jeopardy for these species.

Desired conditions, standards, guidelines, and objectives are extremely vague, subjective, unenforceable, and often voluntary, and so will not protect water quality or ESA-listed fish. The desired conditions, standards, and guidelines do not contain appropriate mechanisms for prioritizing water quality parameters such as temperature or fine sediments, and so could easily allow for extreme emphasis on the vegetation manipulation aspect of improving "desired conditions" as a rationale for more logging in RMAs-- regardless of damage to water quality and other RMOs under PACFISH/INFISH. Even the overarching BMFPR standards which are ostensibly instrumental in ensuring "that the aggregate of any adverse effects from future site-specific activities will be small and will be offset by beneficial actions" (ROD pg. 37). How are such vague standards supposed to ensure water quality and ESA fish viability? There is nothing in the standards to ensure that water quality parameters will take priority, and desired conditions could almost always be used to justify logging (vegetation manipulation), regardless of water quality or instream conditions or restoration needs.

The ROD (pg. 37) acknowledges that the BMFPR: "may affect, likely to adversely affect" MCR Steelhead, Upper Snake River steelhead, Snake River spring/summer and fall Chinook, and all their Designated Critical Habitat." The BMFPR did not adequately disclose or analyze the risks associated with logging, livestock grazing, and road-related impacts, or include the full range of best available science in their analyses. The ROD pg. 38 – 39 notes: "The aquatic portion of the biological assessment found implementation of the revised land management plans may affect, and is likely to adversely affect bull trout, Middle Columbia River steelhead, Upper Snake River Basin steelhead, and Snake River spring/summer and fall Chinook salmon, and may affect, and is likely to adversely affect designated critical habitat for these fish species. The revised land management plans may have short-term adverse effects to these species and their critical habitat, but result in overall net conservation and recovery benefits. The resulting conclusions did not adequately consider the long-term risks and likely loss of viability and downward population trends likely if the BMFPR is implemented. For example, Rieman et al. (2001) noted in relation to accelerated restoration schedules that: "…vulnerable aquatic species could be impacted in the short term in ways from which they could not easily recover, even if long-term benefits eventually became evident in later years" (also cited in the USFS proposed Forest Plan Revision (2014)). The two forestwide standards that ostensibly aim at "avoiding or minimizing" adverse effects are WM-1S and RMA-1S. However, because these standards rest "desired conditions" to provide protection, they are rendered extremely vague, unenforceable, subjective, and often voluntary. Aggregate negative impacts that create widespread degradation are likely to be the result of such issues. (See additional discussion in this section or our objection).

The BMFPR lacks adequate measures for protecting priority or key watersheds. Though the Forest Plan has identified key and priority watersheds, it provides no further protections for bull trout in those watersheds. The Forest Plan provides no heightened standards, and at best provides a few objectives that give these watersheds some sort of un-quantified "prioritization" in their general management guidelines. Even under the relatively weak INFISH, there were additional standards designed to protect bull trout in priority watersheds.

The BMFPR appears to continue to leave out important information regarding threats, population trends, viability, connectivity, significance (or not) of trends, habitat condition, and other key information regarding Bull trout and other ESA-listed species. Please see our extensive DEIS comments throughout our aquatic comments on this issue, as they are still relevant.

The BMFPR FEIS did not give adequate consideration or analyses for aquatic ESA-listed species such as Tightcoil snails, sensitive mussels, Columbia spotted frogs, and others.

Proposed Resolution:

- No logging or silvicultural-based vegetation management should take place within riparian corridors (RMAs)
- PACFISH/INFISH, RMOs, and corresponding standards should be preserved and strengthened to provide for high quality water quality and viability of ESA-listed aquatic and riparian species, particularly within key or priority watersheds.
- Livestock grazing should not occur within subwatersheds that support ESA-listed fish such as Bull trout and Mid-Columbia River steelhead.
- See also proposed resolutions regarding standards

IV. Clean Water Act

The Forest Service has a legal responsibility to uphold state water quality standards on the federal lands they manage. We are very concerned that the BMFPR will not uphold the water quality standards. Given the BMFPR's abandonment of PACFISH/INFISH and RMOs; the lack of quantifiable and enforceable standards or adequate protections regarding logging and grazing; inadequate road closure and non-existent road decommissioning goals; inadequate Wilderness recommendations; and large volumes of timber removed, it is unlikely, especially in relation to increasing climate change-related impacts, that water quality standards will be attained or upheld. Logging as "restoration", and the road-related impacts associated with logging, will only serve to exacerbate water quality impairments such as elevated stream temperatures and fine sediments. In order to meet water quality standards in relation to sediment inputs, the BMFPR must set quantifiable, enforceable, standards that are protective of aquatic and riparian ecosystems in order to avoid water quality degradation in streams. For example, RMAs should include protective standards that are quantifiable and enforceable in relation to preventing elevated stream temperatures and fine sediments in streams. BMPs should not contain loopholes such as "whenever practical" in relation to activities in riparian/RMA areas.

The most common water quality impairment in National forest System lands is stream temperature. Elevated stream temperatures are known to negatively impact fish stocks on National Forest lands in the Blue Mountains, including anadromous fish, and listed and at-risk fish such as Bull trout. The negative impacts to fish from elevated stream temperatures are well known and well documented, and discussed in more detail in the sections about aquatic species, climate change, and other sections of BMBP's DEIS comments and this objection. Relationships between timber harvest and grazing, and stream temperature are also discussed in our DEIS comments, which remain relevant. Water quality standards for temperature, sediment, and other water quality parameters are not being met on hundreds of miles of streams on these NF lands. TMDLs and WQRPs have not been developed in a timely fashion for many 303(d) listed basins. BMPs have not been adequately re-evaluated or adjusted to assure compliance with water quality parameters such as temperature. WQRPs plans and TMDLs often do not adequately deal with forest management activities, and monitoring not always followed through and almost never publically transparent

More than 1,240 stream miles on National Forest lands in the Blue Mountains are listed as not meeting water quality criteria. The most common water quality impairment on National Forest lands is stream temperature (Draft EIS for the Blue Mountains Forest Plan Revision, Vol. 1 pg. 272). The USFS has data showing streams that are almost certainly violating state temperature standards but that ODEQ does not have data for, so this figure (based on ODEQ's past Integrated Databases) is almost certainly a severe underestimate. This important baseline of conditions, as included in the BMFPR analyses, is inaccurate. Many streams are violating the state temperature standards by substantial margins, including those in mid and high-elevation forested streams that support ESA-listed species such as Mid-Columbia River steelhead and Bull trout, and are Designated Critical Habitat—but are not included in the state's Integrated Database or the 303d list. It is not uncommon for these streams to be over 70 degrees Fahrenheit. Please see our spreadsheet for examples (the spreadsheet is included in our objection addendum). The problem is almost certainly more widespread than the streams we had time to investigate.

The BMFPR did not disclose temperature monitoring data or trends in key analyses (ARCS figure 15, pg. 80). Recent intensive watershed monitoring report for the Middle Fork of the John Day Watershed reflects that temperature remains the most central issue. (OWEB Monitoring & Reporting Upper Middle Fork John Day River Intensively Monitored Watershed)

Key parameters seem to be missing from the model for assessing watershed conditions depicted in this figure, such as temperature, embeddedness, soils, roads, stream crossings, past/present logging (FEIS vol. 1, chap. 2, Table 26, pg. 339). Inaccurate or inadequate analyses and lack of accurate baselines will not assure compliance with water quality standards under the Clean Water Act.

During our ongoing research on timber sales and grazing allotment NEPA documents on USFS lands in eastern Oregon, BMBP has found numerous streams that exceed state water quality standards, yet repeatedly these violations do not appear in ODEQ's Integrated Database. ODEQ does not have water quality data for at least 46 streams in recent timber sales that are not meeting temperature and/or sediment standards according to USFS NEPA documents. These 46 streams reflect only the streams BMBP has had time to investigate in relation to recent timber sales; they are likely the tip of the iceberg of an even more widespread problem. Many of these streams support Threatened species such as Bull trout or Mid-Columbia River steelhead, and some are designated critical habitat. Water quality violations in these streams are often very severe, and exceed temperature thresholds for migration, spawning, or lethal limits for aquatic species such as Mid-Columbia River steelhead and Bull trout. Without an accurate listing of which streams are violating water quality standards, it is impossible for either ODEQ or the Forest Service to develop plans to restore streams, address watershed-scale issues, or adequately protect aquatic species. The BMFPR's inaccurate baseline also makes it very difficult for the public to be informed about or have access to accurate information regarding these issues. We are especially concerned that the BMFPR proposes to increase logging across vast tracks of public forests, and to increase logging within streamside corridors. Stream temperature warming and dewatering of streams due to climate change will exacerbate the ecological degradation and loss of habitat caused by logging, livestock grazing, and road-related impacts. The USFS often cites the absence of streams on the 303d list as part of their rationale for why logging adjacent to some of these same streams will not have significant impacts on water quality-- even though their own data reflects stream temperature violations that would almost certainly place these streams on the 303d list if ODEQ had the USFS's data. For example, Cougar Creek in the Camp Lick timber sale on the Malheur National Forest is Designated Critical Habitat for Threatened Mid-Columbia River steelhead, reaches 7-day max average temperatures of 74 degrees Fahrenheit according to USFS NEPA documents, and is currently slated to have commercial logging take place within its RHCA. Yet ODEQ's database shows no data for this stream. There are numerous other similar examples across the region.

We are concerned that the BMFPR fails to create an adequate adaptive management framework, and has failed to use an adaptive management framework in the development of the ARCS and BMFPR. Please see further discussion of this issue throughout this objection. Long-term studies are needed but were not provided for under the BMFPR. The BMFPR does not have monitoring plans that include clear, enforceable triggers, decision trees, and adaptive management roadmaps in order to adjust management actions—particularly important in the event that goals, objectives, and standards are not being met in relation to land management actions. Adjustments and benchmarks in relation management actions and monitoring data need to be clear and enforceable. Monitoring of water quality should be mandatory in streams that are water quality limited but continue to have land management activities taking place in their watersheds, or at least over a certain percentage of their watersheds, and should include monitoring of the pollutant(s) indicated in the 303(d) list. Monitoring efforts should take place at landscape, watershed, and project-specific scales. The BMFPR does not seem to provide clear plans for targeted monitoring of logging projects and grazing allotments. Prioritization plans for monitoring specific (or categories of) areas/watersheds/types of management projects should have included clearly laid out timelines and goals.

The lack of adequate monitoring or adaptive management framework is especially problematic given that the USFS has not been adequately tracking or sharing the results of their water quality monitoring with the public or agencies ODEQ, and so does not have an accurate baseline of current conditions for water quality. The Forest Service lacks data or evidence showing that recent logging activity and current logging proposals will not adversely affect or further degrade water quality, including for in streams that are already in violation of state water quality standards for temperature or sediment. It is not clear that the USFS has any upstream/downstream monitoring data for logging projects in or adjacent to riparian corridors. The BMFPR does not seem to contain any data or information regarding upstream/downstream and before/after monitoring from logging projects, including logging projects taking place within riparian corridors and/or priority or key watersheds. Subwatershed and watershed scale water temperature monitoring data often reflect high stream temperatures that are in violation of state water quality standards. The necessary follow-up work to figure out what is causing these widespread water quality issues and violations is lacking.

Monitoring at smaller scales, targeted monitoring of logging projects and grazing allotments has been inadequate or non-existent in many areas, as well as inconsistent and cherry-picked. Stream temperature monitoring should be able to answer specific questions about land management effects on stream temperature. This requires targeted monitoring, as well as monitoring at subwatershed, watershed, and landscape scales. Monitoring should include project compliance data, as well as data from headwater and low order streams (which are often under-protected and un-monitored, but make up a larger percentage of stream miles that larger order streams). Most BMPs do not require strict adherence, are often very subjective or open to wide interpretation, and are not always clearly communicated. BMP monitoring is inadequate and has not provided robust datasets show that BMPs are sufficiently protecting water quality when logging in riparian corridors. There is also evidence to suggest that BMPs may not be sufficient to protect sensitive fish (USFWS 2010; Steel and Beckman 2014). BMPs need to be evaluated much more extensively, and adjusted to ensure compliance with sediment guidelines. Monitoring needs to be expanded to include meaningful sediment-related water quality data. BMPs and associate monitoring should include consistent, transparent, and clearly enforceable plans with well-defined adjustments and consequences when standards are not being met.

It is also not at all clear that the USFS has adequate plans or internal structure mechanisms to ensure that water quality data are housed in a proper manner that will allow for the safe and transparent housing of those data, and provide for the use or review of the data by either the public or agencies. Currently, the USFS has a NRIS database for regional use. However, it has become clear through personal communications with the USFS and the lack of responses documents provided to our FOIA's for water quality that most of the USFS's data are not actually housed within this database.

Plan components need to simultaneously correct water quality issues through adaptive management and responsiveness to monitoring data, and maintain areas with high water quality identified through monitoring. Monitoring components should include defining ecological indices for condition assessments as well as water quality standards. Streams that are water quality limited need to have the cause of the pollutant identified, and restoration actions should address the cause of the pollutant rather than exacerbating it. Monitoring and adaptive management triggers and responses should be addressed by monitoring and restoration plans. Natural restorative processes should be emphasized and encouraged, and hindering these processes should not be allowed.

Restoration activity in response to monitoring should logically address the pollutant, and include monitoring to ensure that the restoration activity had the desired effect. Monitoring plans should include plans for monitoring priorities. For example, an example of an area where temperature monitoring should be prioritized is in streams that are 303(d) listed, contain Bull trout distributions, and may be impacted by future land management actions. Numerous creeks on NF lands that are 303(d) limited for temperature and/or sediments are currently facing plans to "restore" them with riparian logging. Restoring stream temperature with logging is an inappropriate and illogical response to a violation which will likely be made worse with the "restoration". Riparian logging may include heavy thinning, no wildlife corridor protections within riparian areas, and may include mini-clearcuts. For example, the silvicultural prescription for the currently proposed Big Mosquito and Camp Lick projects on the Malheur includes these issues, as well as "gaps" of one to two acres directly adjacent to several streams, including reaches with or draining into Bull trout distributions. Some gaps have no minimum requirement for number of trees left within the gaps.

Monitoring is essential for understanding trends for water quality, aquatic and riparian species, and other integral biotic and abiotic resources and ecological functions. Monitoring is essential, directly and/or indirectly, in order for the FS to fulfill legal obligations and responsibilities under the CWA, the ESA, Planning Rules, and other environmental laws. The proposed FPR does not go far enough in ensuring that adequate monitoring will take place, or in clearly defining triggers, bench marks, decision trees, standards, or other mechanisms that provide for an effective and efficient monitoring plan.

It is not clear that the USFS's awarding of a 10 –year, large-scale contract complies with NEPA, or taking a "hard look" at the effects of such a large-scale, long-term contract under NEPA. It also did not seem to include public review or input. The BMFPR in the FEIS Vol. 1, Chap. 3, pg. 282 notes: "The specific objectives addressed by some of the major plan amendments like the Eastside Screens, PACFISH and INFISH, have overlaid and diverged to some extent from some of the original goals of the 1990s plans. Treatments and area priorities have often been designed to minimize conflicts, making integrated project planning difficult. The resulting abundance of relatively small-scale implementation projects designed for specific purposes, has largely been insufficient in terms of rapidly moving substantial areas of the forest landscapes toward more resilient conditions. One notable exception to this pattern, however, has been the award of a large-scale 10-year Integrated Resource Service Contract by the Malheur National Forest in 2013. This 10-year contractual obligation to supply substantial volumes of biomass and timber to contractors will likely provide additional momentum to the planning and implementation of forest restoration projects by the Malheur National Forest for at least the remaining term of the contract. These types of projects utilize Stewardship authority, which allows the revenues from commercially viable treatment by-products to fund other ecologically critical restoration activities like fish passage enhancements, non-commercial thinning and stream and spring restoration projects. This general approach, of designing larger projects that are more fully integrated across multiple resource areas based on ecological needs, should be well supported under the direction of the final revised Forest Plans. The plan direction will facilitate integrating priority watershed work into the planning process, and the incorporation of best available science into the design of plan components should simplify future project level planning."

Proposed Resolutions:

- PACFISH/INFISH direction, including associated RMOs and quantitative standards should be preserved and strengthened
- Desired conditions, guidelines, and standards that are supposed to provide key protections for water quality parameters and instream habitats need to become quantitative standards that are enforceable, clear, not subjective, and not voluntary. Such standards also need to have clear and decisive mechanisms to prioritize the protection and restoration of water quality standards and instream habitats, and to have restoration activities that are logically respond to and address the impairment and its root cause (as opposed to, for example, extensive logging in streams that are already suffering from elevated stream temperatures and sediments).
- Logging should not take place in riparian corridors, on steep slopes, sensitive soils, or other ecologically sensitive areas.

V. National Environmental Policy Act (NEPA)

Purpose and need: The loss of quantitative standards for key aquatic and riparian habitat components and the emphasis on silvicultural and logging-based solutions in the ARCS and BMFPR would result in degraded aquatic and riparian habitats across the landscape, and run contrary to the BMFPR's stated purpose and need. The ARCS and BMFPR abandon quantitative standards, RMOs, and the successful strategies implemented under PACFISH/INFISH, and so threaten to reverse the recovery seen under PACFISH/INFISH. This runs contrary to and will not fulfill the BMFPR's stated purpose and need for "**providing habitat for terrestrial, aquatic, and riparian-dependent species; maintaining water quality; providing channel stability; reducing erosion; moderating floods; and maintaining reliable stream flows for downstream users".** PACFISH/INFISH standards were designed to protect the aquatic and riparian habitat components that are essential for ensuring good water quality, habitat for aquatic and riparian species, streamflows, and reducing erosion—all components that the purpose and need claims to prioritize. The BMFPR's abandonment of quantitative and enforceable standards for bank stability, bank angle, stream temperature, sediment, large wood in streams, pool frequency, pool width to depth ratios, and others will result in widespread degradation of these components and of aquatic and riparian habitats. The ARCS and BMFPR's desired conditions, standards, and guidelines are qualitative, highly subjective, largely unenforceable, and often voluntary. The ARCS and the BMFPR utterly fail to provide the same level of protection provided for under PACFISH/INFISH, and in fact represents serious backsliding from PACFISH/INFISH. In addition, restoration plans that emphasize logging and vegetation management are incongruous with identified primary problems and threats in aquatic and riparian ecosystems on the forests such as elevated water temperatures and sediments, road-related degradation, fish passage barriers, and stream morphology and connectivity. The BMFPR's direction to abandon PACFISH/INFISH protections indicate a lack of concern about the foreseeable and serious negative ecological repercussions which are wholly opposed to the stated goals.

Contrary to the stated purpose and need, excessive logging will exacerbate fire and create degraded ecological conditions, particularly in sensitive aquatic and riparian ecosystems. The BMFPR's stated purpose and need includes "[t]o address management of fuels and fire risk. **Changing vegetative conditions have made forests more susceptible to disturbances, such as uncharacteristically severe fires, and insects and diseases".** However, the BMFPR fails to analyze or address the scientific controversy regarding their assumptions around fire and fire risks; vegetation HRV; the efficacy of fuels reduction/vegetation management; the ecological risks of logging as "restoration"; and restoration priorities in the face of climate change. Unmanaged forests do not pose more risk of high severity fires, and in fact logged forests often burn with greater severity. Bradley et al. 2016 "examined the severity of 1,500 forest fires affecting over 23 million acres during the past four decades in 11 western states. They found fires burned more severely in previously logged areas, while fires burned in natural fire mosaic patterns of low, moderate and high severity, in wilderness, parks, and roadless areas, thereby, maintaining resilient forests. Consequently, there is no legitimate reason for weakening environmental safeguards to curtail fires nor will such measures protect communities" (Bradley et al. 2016. The study area in the Bradley et al. 2016 scientific paper included the Blue Mountains in eastern Oregon. The BMFPR's proposals to increase logging for wildfire concerns are misguided and misinformed.

Logging, including thinning or vegetation management, often exacerbates the very disturbances the agency seeks to suppress such as wildfire, insects, or disease. Logging can exacerbate bark beetle outbreaks and cause the spread of native diseases such as laminated root rot and mistletoe. For example, see our discussion on Dr. Diana Six's work on Bark beetles in this objection. Logging and other management activities frequently moot or destroys the ecological benefits associated wildfire and native insects and diseases, such as creation of snags, dead wood, and other wildlife habitat. Where is the evidence that logging accomplishes any of these objectives? Stand replacing wildfires and insects and disease are all natural disturbances that were part of the historic condition in eastern Oregon. Logging does not 'maintain habitat' or 'increase resiliency of the ecosystem' in that it removes needed biomass and forest structure, including the next generation of large, more fire resistant trees, and causes unnatural impacts such as heavy equipment damage to soils, that impairs resiliency. There is no proof that logging reduces stand replacing wildfire or enhances natural control of insects and disease. Wild fire is not 'catastrophic' but the intensity of logging and carbon/nutrient extraction that would result from the BMFPR would have truly catastrophic effects. These issues are heightened in riparian areas, due to the delicacy and disproportional ecological importance of these sensitive aquatic and riparian ecosystems. Riparian ecosystems are also unique compared to uplands in their plant and tree species compositions and HRV, moisture availability and productivity, topographic variation, and other factors that influence important management considerations. The BMFPR's proposed focus on vegetation management and silvicultural-based activities within riparian corridors is in opposition to best available science and does not adequately analyze or consider the ecological risks of logging. The emphasis on logging and "vegetation management" also threatens to exacerbate fire and create degraded ecological conditions, and runs contrary to the BMFPR's stated purpose and need. BMFPR's planned direction is consistently in contradiction with stated purpose and need statements. For further detail on the USFS's failure to use best available science or disclose or analyze scientific controversy surrounding these issues, please see additional discussion throughout our objection.

A key component of aquatic and riparian ecosystems is large wood, including live and dead trees, snags, downed wood, and large wood in streams. Large tree and wood recruitment, both in riparian areas and in adjacent uplands, is of extreme importance to the long-term integrity of these systems. Unfortunately, protections for large trees are almost completely gutted under the BMFPR, with only subjective direction for large or old tree protection. The criterion outlined by the BMFPR for the protection of large and old trees lacks scientific integrity and is not based on best available science. (See discussion on large trees and the Van Pelt guidelines in our discussion of scientific controversy in our objection). In addition, there is no evidence presented that supports the contention that removing many mature, more fire-resistant trees and opening the area up tremendously to hotter, drier conditions with increased wind speeds through stands would somehow create stand conditions that are better able to withstand insect, disease, or fire activity. In fact, we think that such extensive opening of stands, removal of mature trees, etc. will likely increase wild fire severity through the removal of shade, moisture retention, and mature trees more resistant to fire, creating hotter, drier microclimate conditions with greater wind speed potential. Thus the BMFPR's proposed direction is inconsistent with the purpose and need statements for the plan itself.

The alternatives in the BMFPR FEIS are improperly narrowly construed so as to preclude consideration of less logging or grazing. This issue stems, at least in part, from the overly narrowly construed purpose and need of the BMFPR. The BMFPR does not include an alternative which does not emphasize logging as the primary active "restoration" measures, or that emphasizes passive vegetative restorations coupled with active road decommissioning and fish passage improvements, a combination that would be less risky and more scientifically justifiable. Passive restoration has been shown to improve aquatic habitat conditions since implementation of PACFISH/INFISH; restoration dollars can be saved and, in certain circumstances, used more efficiently through implementing the strongest protections possible in order to allow for low risk yet effective passive restoration. The "restoration activities" proposed to improve soil and watershed function for each alternative in the three forests emphasize "improving forested vegetation", which includes or often is entirely silvicultural, and poses risks to soils and watersheds that logging has been shown to have (increases erosion, sediment production and input to streams, temperature increases, etc.). It is not clear how many stream miles are currently blocked by culverts, and what percentage of those stream miles would be treated for fish passage improvements. Less risky restoration activities should be much more greatly emphasized, including activities such as culvert removal, road density reduction, and passive restoration. While Alternative C goes much farther than the other alternatives in such a direction, these issues nevertheless apply to this alternative as well.

The USFS presents extremely different BMFPR NEPA documents for public review compared to DEIS NEPA documents that were available for public comment. Large portions of the FEIS, were not available for or subject to public review during the DEIS public comment period. For example, the individual Forest Plans for the Umatilla, Malheur, or Wallowa-Whitman were not available for public review until the objection period.

One FEIS for three forests and three Forest Plans under the BMFPR is inappropriate and does not fulfill the agency's obligations under NEPA. Individual forests are unique and contain distinct topographic, climatic, and ecological conditions. One FEIS is overly broad to sufficiently address localized issues, existing conditions, management trends, and appropriate restoration trajectories across each of the three forests.

USFS analyses within the ARCS and the BMFPR is confusing and unclear, and does not provide for the public to review the information in an informed or transparent manner. For example, it is very difficult to determine what sorts of "active management" activities are referred to or proposed throughout the ARCS and the BMFPR. It is very difficult for the public to determine, based on USFS information given in the BMFPR, the extent of logging or silvicultural-based activities proposed within riparian corridors. It is inappropriate and confusing for the USFS to lump logging and silvicultural-based activities with other "active management". The USFS regarding surrogate species is also very confusing and difficult for the public to interpret. (Ex.: ARCS Tables 2-5; FEIS Vol. 2 chap 3 pg. 51). The BMFPR explanations of "Essential" habitat for fish and the Magnuson Stevens Act is extremely confusing and does not provide a clear understanding of this issue to the public (FEIS Vol. 2, Chap 3 pg. 2, 4, 6, and 7)

The BMFPR states that the focus of logging in order to address perceived problems with HRV focuses on dry forests. FEIS Vol. 1, pg. 7: "Within the dry upland forest, where some of the most significant changes in forested structural stages have occurred, the amount of old forest single story has been greatly reduced from pre-1900 levels. FEIS Vol. 1, pg. 7: "Management Focus A strategy for the proposed action was developed to guide future development of projects and activities within the national forests. This strategy is included in the plan revision alternatives. The identification of management focal points highlights those areas where immediate improvements to the resilience of the Blue Mountains ecosystem could be made or areas that are most sensitive from a social perspective. Considering these factors, drivers for active restoration priorities are: • Priority watersheds • Wildland-urban interface • **Dry vegetation groups"**. However, the BMFPR then goes on to include moist forests in proposals for widespread logging. The BMFPR MNF Plan, Table 32, pg. 127: "1.6 Structural Stages Over the next 10 years, decrease mid-age multi-story forest (understory reinitiation stage) in the dry **and moist** upland forest potential vegetation groups by continuing to manage towards a large diameter (old forest) condition. **223,000 acres**" and "Over the next 10 years, reduce the dry **and moist** upland forest potential vegetation groups that are in the closed stand density class **77,000 acres".** There is little to no analysis, ecological justification, rationale, or consideration of the additional and distinct risks related to logging within these moist forests. There are numerous other examples in the BMFPR of unclearly written NEPA; inadequate, or missing analyses; and management direction/conclusions that do not match analyses.

The ARCS and the BMFPR fail to analyze direct, indirect, cumulative effects that will result from the proposed management directions. The ARCS and the BMFPR fails to adequately analyze key issues such as mitigation of climate-related impacts to aquatic and riparian ecosystems. The BMFPR stated that it will have "no direct effects as the Plan is a programmatic action that is not tied to a specific place or location and does not authorize site-specific projects" (FEIS vol 2 chap 3 pg. 52). However, management direction will clearly have widespread direct, indirect, and cumulative impacts on the environment. For example, the USFS failed to provide sufficient information or analyses regarding the ecological risks of logging to aquatic and riparian ecosystems. The BMFPR inappropriately downplayed the risks of detrimental and lethal effects of high stream temperatures on native and ESA-listed fish and aquatic species that will result from management direction in the revised Forest Plans to increase logging within riparian corridors. The BMFPR also fails to analyze issues in relation to management activities such as logging, roads, and grazing that will exacerbate negative effects from climate change. These issues include the agency's increased logging in riparian corridors causing loss of shade, alteration of hydrology, increases in stream temperature and fine sediments, alterations of hydrology, water quality, and degradation of riparian habitat conditions.

Clearcutting is very likely to cause degradation of nearby streams and riparian areas. Clearcutting ("regeneration" logging) should have no place on public lands and should not be included as appropriate silviculture strategies (MNF FP table 36 pg. 141). Upland clearcutting also negatively affects water quality, especially in the presence of hydrologically connected roads, high road density, and other exacerbating issues.

The BMFPR fails to analyze or mitigate climate-related impacts. While the ARCS and the BMFPR acknowledge many of the ecological threats facing aquatic and riparian ecosystems due to climate change such as shifts in watershed hydrology, changes of timing and magnitude of peak and base flows, lower base flows and increased temperatures, decreased connectivity, and other issues. However, the BMFPR fails to include analyses, plans, or alternatives that addresses these threats. The BMFPR's direction to increase logging across the landscape flies in the face of widespread scientific consensus to increase core habitats and connectivity in response to climate change (Heller and Zavaleta 2009), and is incongruous to the BMFPR's own identification of the major threats to aquatic and riparian ecosystems. The BMFPR has an extreme and disproportional emphasis on logging and proposes vegetation management and silvicultural-based activities across what appears to be approximately 22,800 acres *annually* (228,000 acres over 10 years) and between 1,649 - 2,249 miles of streamside corridors during the life of the plan across the three National Forests. This entirely overshadows the much less aggressive or widespread attempts of the BMFPR to conduct restoration activities that are not logging-based or silvicultural, such as culvert repair or road decommissioning. The BMFPR proposes only 2,300 acres soil hydrologic function improvement; 749 stream miles of morphology and connectivity improvement; 250 culverts repaired/replaced; and 900-1,500 road miles of sediment and hydrologic connectivity reduction over 10 years (ARCS, Tables 2-5, pg. 41-42). Table 1 depicts BMFPR's strategies on "Climate change tactics and strategies as identified in Climate Change Vulnerability and Adaptation in the Blue Mountains (and responsive plan approaches)" (Malheur Forest Plan Revision Pg. 22-23).

The BMFPR failed to adequately analyze negative impacts from logging and associated roads in relation to changes to the timing and magnitude of peak and base flows. Please see BMBP's discussion of related science in our Comments on Aquatic Section of Proposed Forest Plan Revision and DEIS. The BMFPR discusses peak and base flows in relation to climate change, and in desired future conditions, but they are not addressed in relation to existing management condition or relationships to current land management activities.

The BMFPR failed to analyze or take responsibility for impacts to watershed hydrology due to land management actions on National Forest lands. The ARCS and BMFPR downplays the effects of land management activities on changes to stream hydrology, such as base and peak flows. The proposed BMFPR also does not adequately address other negative impacts that interact with and are exacerbated by changes to watershed hydrology because of land management, such as increases in temperature, fine sediments, erosion, and changes to channel morphology.

Existing conditions and impacts from land management to channel morphology were also not sufficiently disclosed or analyzed. The proposed FPR has little or no analysis of the potential impacts from land management to these functions, or the direct and indirect consequences of negative impacts (such as increased erosion and sediment potentially caused by changes to peak flow timing and magnitude- there are many other examples of similar domino effects/interactions). If existing conditions and potential negative impacts from land management are not defined or analyzed, then the obtainment of desired conditions is unrealistic and unlikely. This is particularly true since there are few/no standards in the BMFPR in relation to these goals. "Desired conditions" in the BMFPR should be changed to quantifiable and enforceable standards in order to ensure the obtainment of these goals. Climate change related threats highlight the need to address existing conditions as well as land management threats to hydrologic functions, and to consider these threats and conditions concurrently. It is also important to consider how existing conditions and current land management impacts may exacerbate possible negative impacts due to climate change.

FS also did not adequately disclose, seriously consider, or analyze effects from land management activities to hyporheic zones, groundwater function, stream downcutting, wetlands, seeps and springs, or wetlands (aside from wetland issues in relation to public water use/water rights). Also, standards should exclude logging on steep slopes and unstable areas from logging, particularly adjacent riparian areas.

The BMFPR fails to use the full range of best available science or disclose and analyze scientific controversy.

The Forest Service fails to consider the full range of best available science or acknowledge scientific controversy regarding assumptions about key issues such as wildfire regimes and vegetation HRV, both in riparian corridors and in uplands; overstatement of fire risk for ecological resources; ecological benefits of wildfire (including large and/or high severity fires); historical documents and forest conditions; Bark beetles and other native insects and diseases; efficacy of thinning to address wildfire concerns or change fire behavior; long-term landscape level plans regarding restoring wildfire to the ecosystem (or the lack of those plans); post-fire or "salvage" logging; the Van Pelt guidelines and determining the age of Grand fir; and other issues.

Scientific controversy regarding logging and vegetation "management" within riparian corridors: A large body of scientific research shows that logging near streams can have long-term and devastating consequences for stream ecological integrity and water quality. Logging in riparian corridors can cause degradation of water quality such as stream temperature increases, changes to stream temperature patterns, increased fine sediment inputs, stream bank instability, and other problems. The USFS has ignored and downplayed the well-documented negative affects and ecological risks associated with logging within streamside corridors. Even non-commercial thinning in riparian corridors is, at best, a large scale and ecologically risky experiment in which little is known about the outcome. Risks are considerable, and the outcome can have unintended negative consequences. Rieman et al. (2001) noted that: **"…vulnerable aquatic species could be impacted in the short term in ways from which they could not easily recover, even if long-term benefits eventually became evident in later years"** (also cited in the USFS proposed Forest Plan Revision (2014)).

When aquatic species such as Bull trout have already fragmented populations, low numbers, and are currently limited by high stream temperatures, creating widespread situations in which their populations cannot easily recover from management effects in miles of streams is extremely risky at best. Logging poses a greater risk to aquatic species than wildfire, even high-severity wildfire. The USFS proposed Forest Plan Revision (2014) vol 2. pg 60: **"Redband trout and bull trout have been shown to recolonize severely burned drainages within two years, provided the drainages were physically accessible (i.e., no culvert barriers, and provided that other fish in unburned areas were close enough to discover and move back into the recently burned habitat"**

Some studies have found selective logging may be associated with increases of instream fine sediments (Kreutzweiser et al. 2005, Miserendino and Masi 2010), changes in macroinvertebrate community structure or metrics (Flaspohler et al. 2002, Kreutzweiser et al. 2005), alterations in nutrient cycling and leaf litter decomposition rates (Lecerf and Richardson 2010), and increases in stream temperatures (Guenther et al. 2012). Flaspohler et al. (2002) noted that changes to biota associated with selective logging were found decades after logging. While these studies did not take place in eastern Oregon, they strongly suggest that alterations caused by logging within riparian buffer zones may result in significant changes in water quality parameters and stream biota in many areas; these results are likely tied to dynamics that may be common to many forested streams to varying degrees.

Stream temperature and sediment

High stream temperatures are already a limiting factor for fish in many areas, as well as the most common water quality problem. Threatened fish stocks are already struggling due to high stream temperatures and increased fine sediments in many areas. Stream temperature increases, especially in areas that are already in violation of state and Forest Plan stream temperature standards, are especially dangerous to Bull trout and Steelhead populations. Even if temperature increases aren't detected at larger watershed scales, localized increases at the subwatershed or reach scale can be very important for already Threatened fish stocks—especially if the problem is repeated in multiple stream reaches across the landscape. Especially given accelerated and widespread logging occurring throughout the MNF, effects on Bull trout and Steelhead in multiple individual streams are extremely concerning.

There has been little direct monitoring or studies done regarding the effects of logging in riparian corridors on stream temperature in relation to current silvicultural prescriptions. It is well documented that heavy logging within riparian areas will significantly raise stream temperatures, often drastically, as well as negatively impact other water quality parameters (such as fine sediment). There is little reason to conclude that removing some trees from the riparian corridors will not have an intermediate negative affect on stream temperatures—likely resulting in an increase in stream temperatures, though not as great as the increases seen in clear cut scenarios. Given that many streams are already in violation of water quality standards for temperature, and that stream temperatures already exceed optimal ranges for fish in many streams– even minimal increases in stream temperatures may pose additional severe threats to fish viability.

Guenther et al. (2012) found increases in stream temperature in relation to selective logging. The Guenther study found increases in bed temperatures and in stream daily maximum temperatures in relation to 50% removal of basal area in both upland and riparian areas. Increases in daily maximum temperatures varied within the harvest area from 1.6 to 3 degrees Celsius.

In addition, current and thorough research indicates that existing regulations may not adequately protect fish viability. This strongly implies that we need to take into account even more subtle and nuanced effects from land management on stream temperature. For example, the study Key findings for Stream Temperature Variability: Why It Matters To Salmon by Steele, A. and Beckman, B. (2014) at the Pacific Northwest Research station include: "Commonly used degree-day accumulation model is not sufficient to predict how organisms respond to stream temperatures. Changes in how the degree days are delivered have the potential to alter the timing of life history transitions in Chinook salmon and other organisms. Emerging from the gravel a few days earlier or later could directly affect their survival due to changes in available food resources, competition for feeding grounds, or strong currents". Best Management Practices need to be reevaluated and modified to ensure that stream temperature variability is not altered beyond thresholds for Bull trout and other at-risk and aquatic species. It is likely that logging in riparian corridors will affect stream temperature variability as well as average stream temperatures– and poses large risks to the continued viability of sensitive fish, such as Bull trout.

The Steele and Beckman (2014) study demonstrates that organisms are more sensitive to subtle and hard to measure changes or shifts in their environments—much more so than is commonly appreciated or than agency monitor protocols account for. The standards and guidelines we have in place are currently insufficient to protect the viability of many sensitive species such as salmon. Allowing for extensive logging and the logging of commercial-sized trees in riparian corridors is extremely likely to shift baseline conditions in a harmful direction (loss of shade, increase in stream temperature and sediment, loss of biomass, loss of wildlife habitat).

Logging or thinning within riparian corridors will cause fine sediment production and allow for sediment delivery into streams, and potentially contribute to stream temperature increases, increased variability in waters quality and aquatic habitat parameters, alterations to stream hydrology, and other negative impacts. Furthermore, headwater streams and non-fish bearing streams need more, not less, protection. Negative impacts to upstream reaches, such as higher temperatures, increased sediment loading, down-cutting, and altered hydrographs also negatively affect downstream reaches. In order to protect downstream fish bearing reaches, headwater streams need at least as much protection than larger downstream reaches (Rhodes et al., 1994; Moyle et al., 1996; Erman et al., 1996; Espinosa et al., 1997). Both Erman et al., (1996) and Rhodes et al., (1994) concluded, based on review of available information, that intermittent and non-fish-bearing streams should receive stream buffers significantly larger than those afforded by PACFISH/ INFISH. In addition, Best Management Practices (BMPs) may need to be specially designed to ensure protection of Bull trout (USFWS 2010).

In addition, effects of logging (including thinning) can be hard to detect despite being persistent, long-lasting, and negative. For example, the Draft Forest Plan Revision for the Blue Mountains (vol. 2 pg. 48): "Timber harvest can influence aquatic ecological condition via such activities as removal of trees in the riparian zone, removal of upslope trees, and associated understory or slash burning (Hicks et al. 1991). These activities can affect wood recruitment, stream temperatures, erosion potential, stream flow regime, and nutrient runoff, among others (Hicks et al. 1991). Effects of harvest are likely to be different at different scales. Hemstad and Newman (2006) found few effects of harvest at the site or reach scale, but **found that harvest five to eight years earlier resulted in losses of habitat quality and species diversity at the scale of a stream segment (larger than a reach) or at the subwatershed level. Those losses were revealed in terms of increases in bank instability and fine sediment throughout the watershed and increased water temperatures and sediment problems throughout the channel segment. The cumulative effects of widespread harvest within a single drainage in a short period of time resulted in deterioration of the aquatic and riparian habitats, but evidence of effects lagged harvest by several years and different evidences of deterioration showed up at different spatial scales within the watershed".**

Evidence suggests that current BMPs and/or Project Design Criteria may not be sufficiently protective of Bull trout. Bull trout may need special consideration beyond what other fish require, particularly in relation to BMPs. If logging practices such as commercial logging, are allowed in riparian corridors, it is highly likely that streams will be more impacted by roads and road-related effects, not less. The Fish and Wildlife Service Final Rule for Bull trout (Department of the Interior Fish and Wildlife Service 50 CFR part 17 2010) states that: "Special management considerations or protection that may be needed include the implementation of best management practices specifically designed to reduce these impacts in streams with bull trout, particularly in spawning and rearing habitat. Such best management practices could require measures to ensure that road stream crossings do not impede fish migration or occur in or near spawning/rearing areas, or increase road surface drainage into streams."

The current status of Bull trout in eastern Oregon and across the region warrants extreme caution, and logging in riparian corridors pose clear and serious risks to this species. Small Bull trout populations make for fragile Bull trout populations (that are subject to declines due to localized events, genetic drift, and other factors). The Oregon Department of Fish and Wildlife (ODFW) (2005) states that:"[P]opulations of bull trout with fewer than 100 spawning adults are considered at risk of inbreeding and fail the interim risk criteria. The sum of interconnected populations also must exceed 1,000 adults to avoid risk of genetic drift." The two John Day core areas for Bull trout continue to have "substantial, imminent" and "at risk" threat ranks and final ranks (USFWS 2008). The USFWS (2008) shows that in the Umatilla, Malheur, and Walla-Walla National Forests, Bull Trout face substantial or imminent threat on six core areas, and widespread, substantial or moderate non- imminent threat on four areas, and low-severity threat on three core areas.

By logging in and adjacent to riparian corridors areas, threats to water quality from roads are exacerbated. Roads are a primary if not *the* primary threat to water quality in public forests. Logging projects make this problem worse through increased maintenance and use of roads adjacent to and crossing streams and riparian corridors, and through building "temporary" roads and skid trails. In many instances, projects claim to reduce road density but instead the actual road density (existing road density) is increased rather than reduced. Road-related activities in timber sales create lasting effects from "temporary" roads, skid trails, landings, re-opened roads, and closed and decommissioned roads, and increased erosion. Actual on the ground impacts are often not accurately considered. Road density, even for "temporary" use, should not be allowed to increase in areas already exceeding road density standards and existing biological thresholds, especially not in riparian corridors and subwatersheds with Bull trout and other listed fish. Effects from roads are almost never "temporary", and may last for many decades; this can include negative affects on water quality.

The effects of sediments and roads on stream integrity and aquatic habitats affect Bull trout, Steelhead, and other fish. From the Federal Registrar, Department of the Interior Fish and Wildlife Service 50 CFR part 17 (2010) Final Rule for Revised Designation of Critical Habitat for Bull Trout states: "Sedimentation negatively affects bull trout embryo survival and juvenile bull trout rearing densities (Shepard et al. 1984, p. 6; Pratt 1992, p. 6). An assessment of the interior Columbia Basin ecosystem revealed that increasing road densities were associated with declines in four nonanadromous salmonid species (bull trout, Yellowstone cutthroat trout (Oncorhyncus clarkii bouvieri), westslope cutthroat trout (O. c. lewisi), and redband trout (O. mykiss spp.)) within the Columbia River basin, likely through a variety of factors associated with roads. Bull trout were less likely to use highly roaded basins for spawning and rearing and, if present in such areas, were likely to be at lower population levels (Quigley and Arbelbide 1997, p. 1183). These activities can directly and immediately threaten the integrity of the essential physical or biological features described in PCEs 1 through 6."

Fish stocks are stronger and better distributed in areas of little or no management and low road densities, even in fire suppressed areas, and even if severe fires occur. Numerous studies and reports show that many benefits are gained by leaving forests unroaded, and to their own ecological processes (including processes involving fire, insects, and disease). (Bader 2000, Bradley et al. 2002, DellaSala et al. 2011, Frissell and Carnefix 2007, Public Lands Initiative 2004, Reiman and Clayton 1997, Reiman et al. 2000, Thurow et al. 2001, Public Lands Initiative/Trout Unlimited 2004, Western Native Trout Campaign 2001).

Timber harvest, grazing, and the synergistic impacts of the two activities combined have significant negative impacts on aquatic habitats. From NOAA 5-Year Review of Snake River Salmonids:

"Information from the [PACFISH Biological Opinion Monitoring Program] PIBO monitoring program indicates that unmanaged or reference reaches (streams in watersheds with little or no impact from road building grazing, timber harvest, and mining) on Federal lands in the Interior Columbia basin (including the Snake River basin) are in better condition than managed streams

(Al- Chockhachy et al. 2010b). In particular, managed watersheds with high road densities or livestock grazing tend to have stream reaches with worse habitat conditions than streams in reference watersheds. When roads and grazing both occur in the same watershed, the presence of grazing has an additional significant negative ffect on the relationship between road density and the condition of stream habitat (Al-Chockhachy et al 2010b)."

Carnefix and Frissell (2009) discussed impacts from roads, and show that significant negative impacts to sensitive aquatic species are present at road densities greater than one mile per square mile: "Multiple, convergent lines of empirical evidence summarized herein support two robust conclusions: 1) no truly "safe" threshold for 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., threats 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."

For example, the existing road density on the Malheur National Forest is well above the 2-miles/square mile NOAA (1996) threshold for watersheds to be considered "properly functioning". NOAA (1996) notes: properly functioning: 2 miles/sq mile; at risk 2-3 mi/sq mi; not properly functioning >3mi/sq mi.

Wildlife habitat, density, and related issues

Forests located along streams support a disproportionate amount of diversity, and serve as extremely important wildlife corridors. In some areas, over 70% of vertebrate species depend on riparian corridors at various portions of their lives (ISAB 2007). Because streamside areas have been somewhat more protected in the last few decades, they often have some of the last remaining large trees and old growth forest structure in the area. This includes more snags and downed wood. Mixed conifer forests, especially mature and old growth mixed-conifer forests in riparian areas provide critical wildlife habitat—often some of the best remaining habitat or the ONLY remaining wildlife habitat. Logging in mixed conifer forests in riparian areas in order to reduce density is not well supported by literature.

Target densities for forests in many USFS timber sales appear to be based almost entirely on white papers by Powell, a USFS silviculturalist. These are not peer-reviewed or published scientific studies. Powell is one individual with a silvicultural background, and his work has little vetting or transparency. For example, the Summit timber sale target densities appear to have, at least initially, contained faulty assumptions and interpretations based on Powell. Extensive research by BMBP showed that historical documents suggest conditions that do not align with current assumptions about forest densities or species composition. We are very concerned that logging in Riparian Habitat Conservation Areas will have a similar lack of sound basis to inform a "desired future condition".

Logging in riparian corridors to decrease forest density will negatively impact wildlife. For example, Northern goshawk and other accipiter hawks, American marten, Great gray owls, Black-backed woodpeckers, Three-toed woodpeckers, Pileated woodpeckers, Olive-sided flycatchers, and other species that rely on denser forests, mature or old growth mixed conifer forests, and/or will be negatively affected by logging in riparian corridors.

A body of scientific evidence is emerging that suggests that numerous species are more negatively affected by thinning than by wildfire. Example include Olive-sided flycatchers, lynx, Pacific fisher, Spotted owls, flying squirrels, and other species. This kind of research strongly suggests that a greater abundance of caution is needed when considering logging in important wildlife corridors such as riparian areas. Robertson and Hutto (2007) provide evidence for the harmful effects of thinning to some species in their study *Is selectively harvested forest an ecological trap for Olive-sided flycatcher?* The authors state that:

"Human activities that closely mimic the appearance but not the fundamental quality of natural habitats could attract animals to settle whether or not these habitats are suitable for their survival or reproduction. We examined habitat selection behavior and nest success of Olive-sided Flycatchers (Contopus cooperi) in a naturally occurring burned forest and an anthropogenically created habitat type—selectively harvested forest. Olive-sided Fly- catcher density and nestling provisioning rates were greater in the selectively harvested landscape, whereas estimated nest success in selectively harvested forest was roughly half that found in naturally burned forest. Reduced nest success was probably a result of the relatively high abundance of nest predators found in the artificially disturbed forest. **These results are consistent with the hypothesis that selectively harvested forest can act as an ''ecological trap'' by attracting Olive-sided Flycatchers to a relatively poor-quality habitat type. This highlights the importance of considering animal behavior in biodiversity conservation."**

Pilliod et al. 2006 examined potential unintended negative effects on wildlife and habitats due to thinning and prescribed fire. We are concerned that similar negative effects on wildlife and habitats will occur in the widespread logging in riparian corridors. For example, we are concerned about possible losses of snags and dead wood (both in direct response to the project and decreased future recruitment), negative effects on density-and closed canopy-dependent species, negative effects on alpha and beta biodiversity, declines in mammal populations, and other unintended negative effects on the flora and fauna and habitats in the project area. Highlights from their study include:

"Large-scale prescribed fires and thinning are still experimental tools in ecological restoration (box 1), and unanticipated effects on biodiversity, wildlife and invertebrate populations, and ecosystem function may yet be discovered (Allen and others 2002; Carey and Schumann 2003)."

"Species that prefer closed-canopy forests or dense understory, and species that are closely associated with those habitat elements that may be removed or consumed by fuel reductions, will likely be negatively affected by fuel reductions. Some habitat loss may persist for only a few months or a few years, such as understory vegetation and litter that recover quickly. The loss of large-diameter snags and down wood, which are important habitat elements for many wildlife and invertebrate species, may take decades to recover…."

"Wildlife and invertebrate species that depend on down wood, snags, dwarf mistletoe (Arceuthobium spp.) brooms, dense forests with abundant saplings and small poles, and closed-canopy forests for survival and reproduction are likely to be detrimentally affected by fuel treatments that alter these habitat elements"

"Implementation of any thinning or prescribed burning is likely to result in loss of snags, future snags, and down wood that are important stand attributes of healthy forests and critical components of wildlife and invertebrate habitat"

Loss of large-diameter snags and down wood can take years to decades to recover, as indicated by wildland fire research (Passovoy and Fule 2006)."

"There is a great need for long-term observational and preferably experimental studies on the effects of a range of fuel reduction treatments at multiple spatial scales (stand or larger)."

Numerous studies have found negative impacts on wildlife habitats from thinning in riparian areas, even when snags removal is not intended. For example, Pollock et al. (2012) found that selective logging may cause riparian forests to develop characteristics outside of normal late seral conditions in reference stands. Pollock and Beechie (2014) study found that:

"Because far more vertebrate species utilize large deadwood rather than large live trees, allowing riparian forests to naturally develop may result in the most rapid and sustained development of structural features important to most terrestrial and aquatic species".

The following quotes are from August 2017 "Science Findings" from the PNW Research Station:

- In dry forests, a mixed-severity fire that kills trees is an important but underappreciated strategy for providing enough snags for cavity-dependent species. Low-severity prescribed fires may not provide enough snags for these species.

- Suitable snags are limited, such that snag availability drives landscape-level habitat selection by some species. For example, white-headed woodpeckers selected severely burned patches for nesting, which was initially puzzling because this species does not characteristically forage in burns.

- Within burns used by at-risk woodpeckers, the majority (86 to 96 percent) of seemingly suitable trees contained unsuitably hard wood; wood hardness limits nest site availability for these declining species.

    - This suggests that past studies that did not measure wood hardness counted many sites as available to cavity-excavating birds when actually they were unsuitable. "By not accounting for wood hardness, managers may be overestimating the amount of

> suitable habitat for cavity-excavating bird species, some of which are at risk," Lorenz says.

"Currently, the best solution we can recommend is to provide large numbers of snags for the birds, which can be difficult without fire," According to the researchers' calculations, if one of every 20 snags (approximately 4 percent) has suitable wood, and there are five to seven species of woodpeckers nesting in a given patch, approximately 100 snags may be needed each year for nesting sites alone. This does not account for other nuances, like the fact that most species are territorial and will not tolerate close neighbors while nesting, or the fact that species like the black-backed woodpecker need more foraging options. Overall, more snags are needed than other studies have previously recommended."

"Based on their results, Lorenz and her colleagues 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. "I think humans find low-severity fires a more palatable idea. Unfortunately or fortunately, these birds are all attracted to high-severity burns," Lorenz says. "The devastating fires that we sometimes have in the West almost always attract these species of birds in relatively large numbers." Many studies have shown that a severely burned forest is a natural part of western forest ecosystems. Snags from these fires attract insects that love to burrow beneath charcoal bark. And where there are insects, there are birds that love eating these insects. Lorenz and her colleagues stress that providing snags that woodpeckers can excavate is crucial for forest ecosystem health in the Pacific Northwest, where more than 50 wildlife species use woodpecker-excavated cavities for nesting or roosting."

Logging of commercial sized trees within riparian corridors, including those the next size class down from 21" dbh trees, will result in fewer trees available to become mature and large-sized snags, or large living trees. In addition, the Van Pelt guidelines are wholly inadequate for Grand fir, and do not contain guidance that can be used in the field to reliably identify Grand fir older than 150 years. They are also beside the point. It is *large* trees that are necessary for wildlife habitat, and those are in extreme deficit across the region due to logging—regardless of age. The Ursus EA on the Deschutes NF discusses the inadequacies of the Van Pelt guidelines for determining age (pg. 77):

"A size or a diameter limit was chosen as the best metric to measure effect on trees that are old or large on the landscape. Other considerations were made, such as using Van Pelt's guide to identify old grand (white) fir, but due to the characteristics of white/grand fir it was determined to not be an accurate metric. Bark on white/grand fir never develops the thickness of its fire-tolerant associates. The transformation that many trees experience from young gray bark to increasingly more colorful mature bark does not occur with white/grand fir. Even in giant old trees, bark characteristics reveal little about age. Like Douglas fir and western larch, white/grand fir is an opportunist, and has epimoric branch formation. As the stand matures and conditions change around a tree, light penetration may allow new branches to grow where they had been previously lost. Crown condition, tree form, and bark fissures are not an accurate way to tell age. Other than size, there is little else on white/grand fir that indicates age." Nevertheless, the BMFPR states: "For the purpose of this guideline, the definition for the terms are as follows: "Old" trees are live trees with distinct features indicating ages of generally 150 years or older (see guidelines outlined in Van Pelt 2008)." The USFS goes on to state that ""Large" trees are live grand fir over 30 inches diameter at breast height or live trees of any other species over 21 inches diameter at breast height." The USFS fails to provide biologically based rationale for this new direction for the increased dbh for a Grand fir to be considered "large". The USFS also fails to analyze possible ecological negative effects of increased logging of mature and large Grand fir that will result from this change in direction. The BMFPR acknowledges that "[l]egacy trees of particular value to wildlife include those that are also large, rough boled with dead horizontal limbs, have witch's broom deformities, are hollow, have heart rot, pockets of decay, dead or broken tops, cavities and/or substantial wounds (Bull et al. 1997)." Yet, the BMFPR fails to consider the effects of degradation and loss of these key wildlife features due to widespread logging and the BMFPR's intent to reduce these features across the landscape.

The Forest Service claims that Grand firs and other less fire-resistant trees are present in larger numbers and higher densities across the landscape than they were historically, as a consequence of fire suppression. However, the Forest Service abuses this rationale by applying it overly broadly and aggressively, and uses it as an excuse to extensively log old growth and mature forests– including in ecologically inappropriate areas such as forests with ample evidence of historic mixed-conifer and high-density forests, on north and east facing slopes; deep gulches and narrow valleys; forests on soils that hold more nutrients and moisture (such as ash soils); and other areas that show historic evidence of supporting mixed-conifer forests in general and Grand fir in particular. The Forest Service is using flawed assumptions that lack adequate scientific backing in order to log in ecologically inappropriate and sensitive areas, and to large trees across many thousands of acres—despite the documented deficit in large trees across the landscape and their importance to wildlife.

Serious cumulative impacts to wildlife have already likely occurred throughout the region due to the repeated and widespread practice of logging large trees through the improper use of project-specific amendments. For example, the Forest Service has not estimated the combined total of large ≥21"dbh trees planned for logging within the Big Mosquito, Ragged Ruby, and Camp Lick timber sales, and other timber sales on the Malheur, such as the Elk 16 sale and Starr Aspen sale. The USFS has not addressed such questions or considered the cumulative ecological ramifications. Large trees are at a deficit across the landscape and are needed by wildlife. Large and mature or commercial-sized trees should not be logged within riparian corridors. Logging and thinning in riparian corridors harms other healthy forest processes and functions (large tree recruitment, snag and large wood recruitment, "defective" trees due to disease and insects, water quality, soils, etc.).

The BMFPR fails to disclose or analyze scientific controversy and ecological issues surrounding the removal of large and old trees in aspen stands, and the recruitment of large and old trees. The USFS fails to acknowledge that conifers historically occurred within aspen stands, and that old growth conifers within aspen stands supported important biodiversity. The USFS failed to consider similar issues with regard to riparian hardwoods—such as the often cyclical nature of hardwood presence or dominance, particularly in ecological situations where conifer dominance or co-dominance is likely (such as higher elevation and steeper or more shaded valleys).

Bark beetles are another example of the BMFPR's failure to consider the full range of best available science. Bark beetles are native insects that fill needed ecological functions and processes, and are important for the creation of wildlife habitat in riparian areas and uplands. The BMFPR's proposals to log in order to address Bark beetle outbreaks are misguided. The FEIS Vol. 1, Chap 3, pg. 253 states: "[t]hinning has been shown to be a useful means of reducing the likelihood of mortality associated with many common species of bark beetles that play major roles in the forests of the Blue Mountains. It may also help reduce the potential for damage from root disease (Fettig et al. 2007; Filip, et al. 2007). Thinning from below may mitigate the potential impact from defoliators by reducing the multi-storied structures in which some species tend to thrive (Brookes et al. 1987)." However, this assessment fails to consider the numerous peer-reviewed studies and expert opinions show scientific controversy and differing opinions and recommendations compared to those that the USFS put forth regarding Bark beetles. Bark beetle-related scientific controversy that the USFS left out of their analysis includes: the ecological benefits of Bark beetles for forests, that logging is highly unlikely to effectively control beetle outbreaks, and that thinning may actually interfere with long-term forest resilience to Bark beetles. Bark beetle outbreaks are driven by drought and heat, and current large-scale outbreaks are likely the result of climate change. This suggests that logging "treatments" for Bark beetles would have only limited, short-term perceived benefits that would require repeat entries and/or continual management to maintain. For example, Diana Six is a Professor of Forest Entomology and Pathology at the University of Montana, and a leading expert on Bark beetles. She has a M.S. and a Ph.D. in Entomology, as well as undergraduate degrees in microbiology and agriculture. One of her focuses of study includes research on Bark beetle ecology and management, including studies on interactions between Bark beetles, fire, and forest stand structure. She has authored or co-authored 23 peer- reviewed publications related to Bark beetles, and has seven additional beetle-related publications currently in review. She has also authored two book chapters on Bark beetles, and co-authored one technical report. Overall, she has authored or co-authored 56 peer-reviewed studies on a variety of forest-related topics. Her work is renowned and well-known, and has been reported on in magazines and papers such as the National Geographic, the New York Times, and Mother Jones. The Forest Service, however, failed to take into account her research, as well as well-respected current research from several other scientists which contradict the USFS's assumptions about Bark beetles. The USFS has cherry-picked the research they used in the BMFPR in order to further more logging, and ignored the research, conclusions, and recommendations that run contrary the USFS's erroneous assumptions about Bark beetles.

In the study *Management for Mountain Pine Beetle Outbreak Suppression: Does Relevant Science Support Current Policy?*, Six et al. (2014) conducted an extensive literature review on Bark beetle research. Her research, as well as several studies discussed in the literature review shows legitimate scientific controversy that warrants more in-depth analysis. Among other findings, Six's work discusses research showing that thinning forests may decrease the large tree structure that remains in post-bark beetle outbreak forests. These findings suggest that thinning may harm rather than help forest ecological integrity, resiliency, and wildlife species that depend on large tree structure. These issues are particularly relevant to riparian corridors, as riparian corridors are disproportionately important for wildlife use and habitat. Quotes from Six's study follow (emphasis are added):

> *"[I]n a retrospective study investigating the effects of management on spruce beetle, researchers found that post-infestation, untreated stands had more live spruce trees and*

greater basal areas. When comparing only residual large spruce, final densities in both stand types were similar [126]. Six [124] found higher numbers of mature living trees remained in control stands of ponderosa pine than in thinned stands post-mountain pine beetle outbreak. In a study in Canada focusing on stocking density of living lodgepole pine post-outbreak, the authors found that, even in hard hit stands, stocking density in post-outbreak unmanaged stands was sufficient to maintain desired levels of productivity [127].”

“Studies conducted during outbreaks indicate that thinning can fail to protect stands. In Colorado, thinning treatments in lodgepole pine implemented in response to the outbreak that began in the 90s often only slowed the spread. Klenner and Arsenault [122] reported high levels of mortality due to the mountain pine beetle across a wide range of stands densities in lodgepole pine in British Columbia during the same outbreak. They noted that silvicultural treatments were largely ineffective in reducing damage to the beetle. Preisler and Mitchell [123] found that once beetles invaded a thinned stand the probability of trees being killed there can be greater than in unthinned stands and that larger spacings between trees in thinned stands did not reduce the likelihood of more trees being attacked.”

“Unfortunately, long-term replicated studies monitoring beetle responses to thinned forests from non-outbreak to outbreak to post-outbreak phase are virtually non-existent. One large fully-replicated long-term study was initiated in 1999 under non-outbreak conditions and continues to track beetle activity [113]. In this study, mountain pine beetle was low in all treatments in the period leading up to the outbreak, but increased in some controls and burn treatment replicates as the outbreak developed. Although more trees were killed overall in control units during the outbreak, all controls still retained a greater number of residual mature trees than did thinned stands as they entered the post-outbreak phase [124].”

“The manner in which policy makers have accepted beetle timber harvest treatments as a panacea for responding to bark beetle outbreaks in North American forests raises a number of red flags. As ecosystems and places that have economic, social, and cultural value to human communities are altered by climate change, there is a risk that people will overreact because of a need to “do something” to respond to change, and to give themselves some sense of control over broader forces that appear to be out of control. That pressure, to “do something”, might also interact with the uncertainty about which choices are effective and appropriate (as with beetle timber harvest treatments) to create an opportunity for political pressures to force the adoption of particular choices that benefit specific interest groups [143]. It is perhaps no accident that the beetle treatments that have been most aggressively pushed for in the political landscape allow for logging activities that might provide revenue and jobs for the commercial timber industry. The result is that the push to “do something,” uncertainty, and political pressures might lead us to act to respond to climate change before we understand the consequences of what we are doing, in the end producing more harm than good.”

“Many studies assessing the efficacy of thinning have been conducted under non-outbreak conditions. Their results do not reflect how stands perform during an outbreak. Additionally, failures are often not reported, dismissed as a result of poor management

'next door' or targeted for management without evaluation. This is unfortunate because thinned stands that fail may have particular characteristics that could inform a better understanding and application of this approach."

Portions of the Six et al. (2014) article also point to how thinning may lessen the overall, long-term adaptability and resiliency of forests to beetle outbreaks.

"[T]he beetle exercises selectivity in the trees it kills. While extremely high numbers may override this selectivity, evidence is accumulating that, even under outbreak conditions, beetles choose trees that have particular qualities. Beetles commonly select trees for attack that exhibit lower growth rates, defenses, and higher water stress [58,74,77]. While these factors can be influenced both locally and regionally by site conditions and climate, much of the variation in these properties within individual stands that affect bark beetle choice likely has a genetic basis. Outbreaks can result in strong natural selection against trees with phenotypes (and likely genotypes) favorable for the beetle and for those that possess unfavorable qualities [58,77]. However, when humans thin forests, trees are removed according to size, species, and density, without consideration of genetics. Thus, trees best adapted to surviving beetle outbreaks are as likely to be removed as those that are not."

In the Mother Jones article by Oatman (2015) about Diana Six's research, Six expresses her skepticism that current logging practices are the correct approach to managing Bark beetles. She also describes evidence of how beetle-attacks in the past may have helped forests to better survive drought.

"[C]utting trees "quite often removes more trees than the beetles would"—effectively outbeetling the beetles. But more importantly, intriguing evidence suggests that the bugs might be on the forest's side. Six and other scientists are beginning to wonder: What if the insects that have wrought this devastation actually know more than we do about adapting to a changing climate?"

"When beetle populations exploded in the 1980s, this second group mounted a much more successful battle against the bugs. After surviving the epidemic, this group of trees "ratcheted forward rapidly," Millar explains. When an outbreak flared up in the mid-2000s, the bugs failed to infiltrate any of the survivor trees in the stand. The beetles had helped pare down the trees that had adapted to the Little Ice Age, leaving behind the ones better suited to hotter weather. Millar found similar patterns in whitebark pines and thinks it's possible that this type of beetle-assisted natural selection is going on in different types of trees all over the country.""

Also in the Mother Jones article by Oatman (2015) about Diana Six's research, Six describes one of the instances of failure of other researchers to report outcomes showing the ineffectiveness of thinning to lessen tree mortality due to Bark beetles. This account is indicative of the controversy surrounding this issue:

"Six points to a stand of lodgepoles in the University of Montana's Lubrecht Experimental Forest. In the early 2000s, school foresters preened the trees, spacing them out at even distances, and hung signs to note how this would prevent beetle outbreaks. This "prethinned" block was "the pride and joy of the experimental forest," Six remembers. But that stand was the first to get hit by encroaching pine beetles, which took

> *out every last tree. She approached the university forest managers. "I said, 'Boy, you need to document that,'" Six says. "They didn't. They just cut it down. Now there's just a field of stumps."*

Six is not the only researcher to publish peer-reviewed findings that run contrary to the assumptions used by the USFS to justify logging in relation to Bark beetles in the Marsh project. Other researchers have also found evidence that thinning beetle-infected trees may actually interfere with long-term forest resilience to Bark beetles. For example, Fressenberg et al. (2014) discusses that some trees exhibit resistance to bark beetles based on inherited genetic traits for certain resin duct characteristics such as the number of resin ducts and productivity and flow of resin. This suggest that logging without consideration of individual tree characteristics may remove the trees with this genetic adaptation, thus lowering the long-term chance for forests to adapt to bark beetle attack at both the local and landscape scales. Also, in their examination of density reduction as a way to control beetle outbreaks in spruce forests, Temperli et al. (2014) found that *"density reduction cannot be seen as a means to maintain high growing stocks of large spruce trees."* While this study focused on spruce, it and other studies listed here may have important implications for the USFS's misguided efforts to log as a means to maintain large trees in forests being affected by Bark-beetles. In addition, studies suggesting that logging in forests affected by Bark-beetles is misguided and ineffective should be taken into account by the USFS in relation to their assumption that logging is necessary to promote or protect large tree structure. These studies show that this assumption may be inaccurate, and therefore not a sound ecological justification for logging to protect large tree structure.

<u>Climate change</u>

We are concerned about the potential negative effects of logging in riparian corridors on numerous bird species, especially those likely to be vulnerable to climate change. Many birds that are threatened by climate change-driven range shifts are also threatened by logging and other practices on the Malheur NF and other NFs in eastern Oregon. Bird species that rely on denser forests and complex canopy structure are also suffering widespread habitat loss due to logging that targets mature mixed-conifer forests—these provide needed complexity and forest density. Logging in riparian corridors may have disproportionately negative effects on climate-endangered and climate-threatened birds because riparian corridors currently provide some of the best remaining habitat for these birds–many of which breed in eastern Oregon and rely on denser mixed-conifer forests and/or old growth mixed-conifer forests. This includes species such as: Boreal owl; Northern pygmy owl; Northern saw-whet owl; Pine grosbeak; Vaux's swift; Hermit thrush; Three-toed woodpecker; Varied thrush; Evening grosbeak; Hammond's flycatcher; Townsend's warbler; Cordilleran flycatcher; Winter wren; Hairy woodpecker; Great gray owl; and Pine siskin (Csuti et al 1997; Langham et al. 2015). Multiple large timber sales across the Malheur National Forest and other National Forests in eastern Oregon are targeting denser mixed- conifer forests. This represents a significant portion of mixed-conifer forests in the region, and has resulted in widespread degradation and elimination of wildlife habitat for species that depend on these forests. Recommendations need to avoid cumulative impacts to wildlife and aquatic species and their habitats from logging and climate change.

Logging in riparian corridors is likely to decrease connectivity, especially connectivity in mixed-conifer areas that currently serve as important corridors and are among the last remaining areas that can provide connectivity for species that are associated with LOS, mixed-conifer forests, denser forests, etc. Commercial logging, in order to be viable, is likely to further incentivize removal of a greater number of trees, and further exacerbate an already concerning situation.

Increasing connectivity is the most commonly recommended strategy for preserving biodiversity in the face of climate change, according to a review of 22 years of scientific recommendations (Heller and Zavaleta 2009). Increasing connectivity includes actions such as removing barriers to species dispersal, locating reserves near each other, and reforestation. Other commonly recommended connectivity-related actions include creating "ecological reserve networks [i.e.,] large reserves, connected by small reserves, stepping stones"; "protecting the "full range of bioclimatic variation"; increasing the number and size of reserves; and creating and managing buffer zones around reserves (Heller and Zavaleta 2009). Large blocks of habitat that are well-connected to each other are important for the long-term survival for many species in the face of climate change.

It is essential that we preserve core habitats and connectivity corridors because these areas are very important for maintaining genetic diversity, facilitating movement and migration, and providing for range and habitat needs. Connectivity corridors also allow for species to colonize new areas or recolonize after disturbances, which will help species adapt to shifts in geographic range due to climate change. Many species are already facing threats to their viability due to fragmentation and a lack of connectivity; climate change threatens to severely exacerbate risks to their continued survival by further fragmenting habitats.

Logging in riparian corridors is likely to exacerbate some of the negative effects of climate change on riparian and stream ecosystems. Stream temperature is a primary concern. Actions that minimize increased water temperatures are important for maintaining cold water refugia. The Independent Scientific Advisory Board (2007) states:

"Adequate protection or restoration of riparian buffers along streams is the most effective method of providing summer shade. This action will be most effective in headwater tributaries where shading is crucial for maintaining cool water temperatures. Expanding efforts to protect riparian areas from grazing, logging, development, or other activities that could impact riparian vegetation will help reduce water temperature increases. It will be especially important to ensure that this type of protection is afforded to potential thermal refugia. Removing barriers to fish passage into thermal refugia also should be a high priority."

Bull trout may lose over 90% of their habitat within the next 50 years due to increased stream temperatures as a result of climate change. Bull trout require very cold headwater streams for spawning, and so are likely to be disproportionately affected by stream temperature increases due to climate change. Recent projections of the loss of suitable habitat for bull trout in the Columbia Basin range from 22% to 92% (ISAB 2007). The US Fish and Wildlife Service notes that:

"[g]lobal climate change threatens bull trout throughout its range in the coterminous United States…..With a warming climate, thermally suitable bull trout spawning and rearing areas are predicted to shrink during warm seasons, in some cases very dramatically, becoming even more isolated from one another under moderate climate change scenarios….Climate change will likely interact with other stressors, such as habitat loss and fragmentation; invasions of nonnative fish;

diseases and parasites; predators and competitors; and flow alteration, rendering some current spawning, rearing, and migratory habitats marginal or wholly unsuitable."

Salmon face serous threats to their continued existence due to climate change, and are predicted to suffer significant habitat loss**.** The Independent Scientific Advisory Board (2007) notes that according to some research predictions:

"[T]emperature increases alone will render 2% to 7% of current trout habitat in the Pacific Northwest unsuitable by 2030, 5%-20% by 2060, and 8% to 33% by 2090. Salmon habitat may be more severely affected, in part because these fishes can only occupy areas below barriers and are thus restricted to lower, hence warmer, elevations within the region. Salmon habitat loss would be most severe in Oregon and Idaho with potential losses exceeding 40% by 2090**."**

Commercial logging in riparian corridors would likely exacerbate stream temperature issues. Even localized temperature increases may have negative effects on struggling fish populations, especially when repeated in numerous streams across the landscape. Past and current logging, grazing, and roads have increased stream temperatures to ecologically and legally unacceptable extremes. There is little evidence to support that USFS proposals to log in riparian corridors and to focus on tree species composition in riparian corridors is an appropriate response or will ameliorate stream temperature problems. High stream temperatures, as well as increased fine sediment in many areas, are likely the pressing risks to fish viability and stream ecosystems. The synergistic effects of climate change, high temperatures, and increased fine sediments warrant actions such as protecting shade, ecosystem integrity, and terrestrial and aquatic connectivity. Wildfire is far less of a threat to these parameters than widespread logging in riparian corridors.

Hicks et al. (1991) found base flows increased for 8 to 9 years after clearcut logging because rainfall is not intercepted, evaporated, and transpired by trees. Instead, most rainfall becomes surface, subsurface, or groundwater flow once the trees are removed, and therefore contributes to base flow increases. However, the author found that base flow rates declined to lower than normal volumes in areas of hardwood riparian re-growth for the following 18 of 19 years in their study. This was thought to be due to uptake and ET of stream water by the hardwoods, which had a greater effect on lowering streamflow than conifers. Base flow rates in areas without hardwood re-growth continued to be higher than expected 16 years after logging. The authors predicted base flow rates would return to normal in approximately 40 to 60 years. In addition, Jones & Grant (1996) found that watersheds with drier conditions and more intense summer droughts were more sensitive to the effects of logging and roads on increased peak flows. Logging to increase base flows has been widely cautioned against, and is unpredictable and unlikely to increase base flows during the lowest flow periods or for the long-term. In combination with climate change, unintended negative effects may have severe consequences.

Hutto et al. 2016 note, in relation to climate change, that increased efforts towards fuels reduction would be an untenable emphasis:

"Any perceived problem with future changes in fire behavior cannot be solved by redoubling our effort to treat this particular climate change symptom by installing widespread fuel treatments that do nothing to stop the warming trend, and do little to reduce the extent or severity of weather-driven fires (Gedalof et al. 2005). Therefore, fuel management efforts to reduce undesirable effects of wildfires outside the xeric ponderosa pine forest types could be more strategically directed toward creating fire-safe communities….Fuel treatment efforts more distant from human communities may carry the negative ecological consequences we outlined earlier and do little to stop or mitigate the effects of fires that are increasingly weather driven (Rhodes and Baker 2008, Franklin et al. 2014, Moritz et al. 2014, Odion et al. 2014)."

The USFS did not consider or disclose scientific controversy regarding green house gas emissions and carbon sequestration in relation to logging, wildfire, and timber products. For example, mature forests are more effective at carbon sequestration compared to thinned or managed forests. Wildfires release less greenhouse gasses than logging. Carbon sequestration dead zones are expanding. Clearcutting is Oregon's single largest source of greenhouse gas emissions. The insufficient analyses of climate change in the BMFPR do not include best available science. For example, the Forest Service needs to acknowledge the CO2 emission increases and effects of less trees and biomass storing carbon on the ground, rather than simply dismissing these issues by comparing unspecified CO2 emissions from the project to national and global emissions. We are very concerned that logging and burning (and associated road activities) will increase carbon emissions, cause landscape homogeneity, decrease connectivity, increase sediment and temperatures in streams, alter watershed hydrology, raise micro-climate temperatures, and increase stream temperatures. These negative impacts, in combination with cumulative and synergistic effects from climate change, will cause resulting population declines in native at-risk, special-status, and sensitive species. The most effective way to store carbon and to reduce greenhouse gas emissions is to allow all forests on public lands to develop through their own natural processes with little or no human intervention, and to preserve all old growth and mature forests. Currently, destructive commercial logging, livestock grazing, and energy extraction projects produce unacceptably high carbon emissions on public lands. Managed forests store less carbon. Forest practices in the BMFPR include post-fire ("salvage") logging, fire suppression, and selective logging. These logging practices release more carbon than if these forests were left to grow and recover naturally. The BMFPR should have included carbon emissions from logging. The USFS need to disclose and include in its environmental analyses that: forests with the highest carbon storage are unmanaged old growth forests; it is ineffective and inappropriate to encourage rotation-style forestry as a way to offset climate change; and preserving mature/old growth forests is the most effective way store the greatest amount of carbon. The USFS needs to end destructive forest practices on public lands that contribute to greenhouse gases and exacerbate climate change. This includes post-fire logging, and many fire suppression and selective logging practices. Prioritize the preservation of clean, cold water through addressing excessive roading, destructive logging, and livestock grazing damage. True restoration measures, such as removal of fish passage barriers, should be implemented.

Carbon Emissions & Inadequate Climate Change Effects Analysis: Thinning decreases carbon storage compared to unmanaged forests. Beverly E. Law, Professor of Global Change Biology & Terrestrial Systems Science Oregon State University, recently gave a presentation on wildfire risks and management effects. Main points of her presentation included the following:

- "Thinning does not reduce fire occurrence; it can reduce severity, spread"
- "Thinning reduces carbon stocks and sequestration, 100+ years to recoup carbon loss"
- "No guarantees fire will occur during period of thinning effectiveness"

- “No treatment increases carbon stocks. Carbon debt is not sequestered in next century”
- “Thinning for crown fire risk reduction increased net C emissions”
- “Amount of biomass combusted in high-severity crown fire is greater than low- severity surface fire, but difference is small”
- “Low likelihood treated forests will be exposed to fire while effective (~20 yrs)”
- “Thinning larger area to decrease probability of high-severity fire ensures decreased carbon stock and net carbon balance over treated area”
- “Not important to suppress all fires - contributes to landscape heterogeneity” The presentation can be accessed at: https://docs.google.com/viewer?a=v&pid=sites&srcid=Zm9yZXN0Y2Mub3JnfGZmY2N8Z3g6M2Y wMjZiNDJhMTcxZmI4Yg

More on fire and forest density

We are very concerned that the USFS has and will continue to overly broadly apply flawed assumptions regarding HRV and target “desired conditions” to special habitats, important wildlife habitats and corridors, and forests that have been substantially less-impacted by the negative effects associated with past management. Essentially, the forest stands within riparian corridors are some of the only remaining areas that appear to be providing well-used wildlife habitat and that are not sterile and homogenous (like most of the many miles of Ponderosa pine plantations that surround RHCA across much of the district and the region). riparian corridors are not appropriate for conducting risky land management experiments due to their importance for wildlife and fish, water quality, cold water refugia, terrestrial and aquatic connectivity corridors, and their sensitivity to risks associated with logging.

The conversation and understanding of historic natural conditions and what constitutes HRV continues to evolve. There are still many research gaps; the research that does exist is often from other regions or looks at extremely broad landscapes, consists of very small sample sizes, and/or is contradictory. Livestock grazing, roads, and logging pose far greater threats to water quality and riparian corridors than possible alteration of forest species composition or fire regime. In areas where species composition and/or fire regime alteration is posing an ecological threat to a forest stand (especially, for example, in lower elevation Ponderosa pine forests), then the best way to ensure achievement of RMOs is to non-commercially thin and leave all material on the ground.

Fire suppression efforts were highly unlikely to have been widespread or effective in remote areas such as those within the project area until recent decades. The 100+ year timeframe the FEA puts forth for fire exclusion is an extreme overestimate. Heyerdahl et al. (2002) note that fire suppression was not effective until recent decades:

“…active re suppression by land-management agencies because these efforts were probably not effective until the 1940s–50s when surplus military aircraft became available”.

A recent study from Bradley et al. (2016) challenges USFS assumptions about the fire risk associated with more protected areas—those area that have been less-managed or less-logged, but may still have experienced some degree of fire exclusion (such as Wilderness areas. riparian corridors have also, of course, seen much more protection than upland areas). The authors state:

"There is a widespread view among land managers and others that the protected status of many forestlands in the western United States corresponds with higher fire severity levels due to historical restrictions on logging that contribute to greater amounts of biomass and fuel loading in less intensively managed areas, particularly after decades of fire suppression. This view has led to recent proposals—both administrative and legislative—to reduce or eliminate forest protections and increase some forms of logging based on the belief that restrictions on active management have increased fire severity. We investigated the relationship between protected status and fire severity using the Random Forests algorithm applied to 1500 fires affecting 9.5 million hectares between 1984 and 2014 in pine (Pinus ponderosa, Pinus jeffreyi) and mixed-conifer forests of western United States, accounting for key topographic and climate variables. **We found forests with higher levels of protection had lower severity values even though they are generally identified as having the highest overall levels of biomass and fuel loading. Our results suggest a need to reconsider current overly simplistic assumptions about the relationship between forest protection and fire severity in fire management and policy"**

"Protected forests burn at lower severities: We found no evidence to support the prevailing forest/fire management hypothesis that higher levels of forest protections are associated with more severe fires based on the RF and linear mixed-effects modeling approaches. On the contrary, using over three decades of fire severity data from relatively frequent-fire pine and mixed-conifer forests throughout the western United States, we found support for the opposite conclusion—burn severity tended to be higher in areas with lower levels of protection status (more intense management), after accounting for topographic and climatic conditions in all three model runs. Thus, we rejected the prevailing forest management view that areas with higher protection levels burn most severely during wildfires."

Odion et al. (2014) noted, based on extensive literature review of landscape-scale evidence of historical fire severity patters in Ponderosa pine and mixed conifer forests:

"There is widespread concern that fire exclusion has led to an unprecedented threat of uncharacteristically severe fires in ponderosa pine (Pinus ponderosa Dougl. ex. Laws) and mixed-conifer forests of western North America. These extensive montane forests are considered to be adapted to a low/moderate-severity fire regime that maintained stands of relatively old trees. **However, there is increasing recognition from landscape-scale assessments that, prior to any significant effects of fire exclusion, fires and forest structure were more variable in these forests. Biota in these forests are also dependent on the resources made available by higher-severity fire."**

"… most forests appear to have been characterized by mixed-severity fire that included ecologically significant amounts of weather-driven, high-severity fire."

"….paleoecological studies also support mixed-severity fire regimes for the ponderosa pine and mixed-conifer forests. These studies have found charcoal depositions from major fire episodes in ponderosa pine and interior Douglas-fir forests occurring for millennia in the northern Rockies (central Idaho: [100,101]), Klamath [102], Sierra Nevada [103], eastern Oregon Cascades [104], and southwestern USA [105–107]. **These major episodes are generally interpreted as large, severe fire events [101– 107].**

"The high-severity fire rotations […] do not support the hypothesis that low/moderate-severity fire regimes were predominant in the majority of ponderosa pine and mixed-conifer forests of western North America. In all the large, forest landscapes for which data covering at least 70 years exist, high-severity fire rotations ranged from about 217 to 849 years [57], and were mostly 200–500 years. This is generally less than potential tree lifespans. For combined moderate- and high-severity fires in the eastern Cascades, rotations were 115–128 years"

"The majority of the evidence did not support the low/moderate-severity fire hypothesis, but, instead, supported the alternate hypothesis that mixed-severity fire shaped these forest landscapes. This finding applies to Pacific states ponderosa pine, Jeffrey pine, and California mixed-conifer forests, as well as ponderosa pine and mixed-conifer forests in the eastern Cascades, Rockies and southwestern USA, where low/moderate-severity regimes have often been applied."

"In addition, patch sizes of high severity fire in the central Rockies have not increased [58]. Our assessment of high-severity rotations based upon existing literature also revealed a generally lower incidence of high-severity fire in these forests in recent decades…"

"Based on direct observations of fire behavior, high winds (generally 10 m open wind speeds .32–35 kilometers/hr) may subject virtually any conifer forest, regardless of fuel density, to crown fire [108]. Thus, empirical data call into question a major premise of the low/moderate-severity fire regime: that ponderosa pine and mixed-conifer forests may be completely resistant to crown fire. Fire intensity increases with winds, and at winds of .30 km/hr spot fires may be ignited over 1 km ahead of the fire front [109]. The coalescing of separate spot fires with the fire front can further energize wind-driven fire [110,111]. Severe droughts also intensify fires by reducing fuel moisture to extremely low levels, allowing crown fire under less windy conditions [108,112]. Severe drought years throughout much of western North America occurred from 1856 to 1865, 1870 to 1877 and 1890 to 1896 [113]. The extensive high-severity fires of 1910 (the Big Burn in Idaho and Montana), when large areas of drier forests burned at high severity prior to fire exclusion–much of it in ponderosa pine–illustrate how fire behavior that is rare temporally due to extreme climate and weather can dominate in space [1]. Many fire episodes in the charcoal records that exceed modern fires undoubtedly involve combinations of extreme wind, drought, and mass fire."

"The importance of multiple lines of evidence has been stressed in determining whether mixed-severity fire regimes applied historically [122]. **Our results illustrate broad evidence of mixed-severity fire regimes in ponderosa pine and mixed-conifer forests of western North America. Prior to settlement and fire exclusion, these forests historically exhibited much greater structural and successional diversity than implied by the low/moderate-severity model"**

"To improve clarity in communication, we propose that ''low/ moderate-severity'' be applied to those regimes where, as the term implies, high-severity fire is absent. These circumstances appear to be quite rare in the ponderosa pine and mixed-conifer forests of western North America. Therefore, a fire regime with a high-severity component of any amount should not be classified as low/moderate-severity"

"Our findings suggest a need to recognize mixed-severity fire regimes (Table 2) as the predominant fire regime for most of the ponderosa pine and mixed-conifer forests of western North America"

Evidence that Mixed-severity fires are still within historic range of variability in the west is also provided by the research of Pierce and Meyer (2008). They examined the size and frequency of fire-related debris flows within alluvial fans in Idaho dating back approximately 2,000 years. They found that evidence of small frequent fires historically coincided with multi-decadal climatic cycles of greater moister or drought, and that larger fires corresponded to drought cycles. Today's high severity fires were found to be within natural range of variability.

In addition, data from the USFS National Report on Sustainable Forests (2010) shows that fire extent was much more prevalent than today across the US:

Hessberg et al.(2007) found that historically mixed-conifer forests were dominated by dense forests. Many of the mixed conifer forests in the region are closed canopy forests that are highly interwoven complex ecosystems that provide high quality habitat for numerous species such as goshawk, marten, Pileated, Lewis woodpecker, and others. Much peer-reviewed scientific research on mixed- conifer forests has suggested that thinning is likely not needed, effective, nor ecologically beneficial in moist mixed-conifer forest to prevent fire, does not mimic the complex natural fire regime (Noss et al, 2006; Lindenmayer et al. 2009) and threatens to increase fire risk (Lindenmayer et al. 2009). The moist, mixed forest type is fragile and vulnerable to the chronic negative impacts of industrial commercial logging. Mature and old-growth moist mixed conifer stands have dense, moist interiors and little wind, which inhibit the spread of wildfire (Lindenmayer et al. 2009; Morrison and Smith, 2005; Rhodes, 2007). Large fires are climatically driven and fuels reduction treatments can be insignificant to prevent fire spread under these conditions. However, the post-fire habitat is significantly degraded by the logging that happens in the name of fuels reduction prior to the fire. Noss et al. 2006 noted:

"One barrier to better use of ecological science is that individuals involved in developing fire policies and practices have tended to be specialists in fire and fuel management, not ecologists, conservation biologists, or other broadly trained scientists. It is not surprising, therefore, that current forest law does not adequately incorporate ecological considerations in its implementation and tends to promote a narrow definition of restoration that focuses almost exclusively on fuels (DellaSala et al. 2004; Schoennagel et al. 2004)."

"True ecological restoration requires the maintenance of ecological processes, native species composition, and forest structure at both stand and landscape scales. Because forests are highly variable over space and time, few universal principles exist for integrating insights from ecology and conservation biology into fire management policies. Nevertheless, one fundamental principle is that managed forests should not only support the desired fire regime but also viable populations of native species in functional networks of habitat (Hessberg et al. 2005). A common-sense conservation goal is to achieve forests that are low maintenance and require minimal repeated treatment. With time, in a landscape of sufficient size, the right end of the restoration continuum (Figure 4) could be reached, where natural fire maintains the system in the desired state. Indeed, wildland fire use is the cheapest and most ecologically appropriate policy for many forests. We envision a future where fire is seen by land managers and the public as the key to healthy forests, but where each forest and each patch of the forest mosaic is recognized for its individuality and managed accordingly. Above all, a guiding principle of forest management should be a precautionary approach that avoids ecological harm."

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High intensity wildfires produce unique ecological conditions compared to low intensity fires. High intensity fires are historically natural, and unique, and are integral to the biodiversity of flora and fauna in the region. Favoring lower severity fires across the region in management activities may create unnatural ecological situations that are deleterious to the wildlife, ecological processes, and biodiversity of the area. An example of the importance of post-fire areas occurring after high intensity fires include the findings of Donato et al. (2008):

"[S]evere fires are typically expected to be deleterious to forest flora and development; however, these results indicate that in systems characterized by highly variable natural disturbances (e.g. mixed-severity fire regime), native biota possess functional traits lending resilience to recurrent severe fire. Compound disturbance resulted in a distinct early seral assemblage (i.e. interval-dependent fire effects), thus contributing to the landscape heterogeneity inherent to mixed-severity fire regimes. Process-oriented ecosystem management incorporating variable natural disturbances, including 'extreme' events such as SI severe fires, would likely perpetuate a diversity of habitats and successional pathways on the landscape."

Williams and Baker have published several studies suggesting that forests in eastern Oregon were considerably more dense than estimates commonly asserted by agencies (Baker 2012; Williams and Baker 2012; and Baker and Williams 2015). There studies have received criticism by some, such as Fule et al. (2014). However, Williams and Baker (2014) provided in-depth responses to these criticisms and clear rationales and defense of their methods; their response was peer-reviewed and published. Their work should not be discounted; rather, it should be considered part of the ongoing conversation and part of the scientific controversy involved in these discussions. Williams and Baker (2014) note:

"Government wildland fire policies and restoration programmes in dry western US forests are based on the hypothesis that high- severity fire was rare in historical fire regimes, modern fire severity is unnaturally high and restoration efforts should focus primarily on thinning forests to eliminate high-severity fire. Using General Land Office (GLO) survey data over large dry-forest landscapes, we showed that the proportion of historical forest affected by high-severity fire was not insignificant, fire severity has not increased as a proportion of total fire area and large areas of dense forest were present historically….. In response, Fulé et al. …suggest that our inferences are unsupported and land management based on our research could be damaging to native ecosystems. Here, we show that the concerns of FE are unfounded. Their criticism comes from misquoting W&B, mistaking W&B's methods, misusing evidence (e.g. from Aldo Leopold) and missing substantial available evidence. We also update corroboration for the extensive historical high-severity fire shown by W&B. We suggest that restoration programmes are misdirected in seeking to reduce all high-severity fire in dry forests, given findings from spatially extensive GLO data and other sources."

The authors respond to each criticism point by point (I encourage people to read it), and then include the following concluding notes:

"The best possible historical baseline for dry forests is likely to come from systematically combining all sources. Past studies that supported the past incomplete historical baseline, which suggested that low-severity fire primarily maintained historical dry forests, were often spatially limited, incomplete samples of larger landscapes. Tree-ring methods can reconstruct to fine scales back to the late 1800s, but are difficult to complete across large landscapes (but see Heyerdahl et al., 2001). Palaeoecological reconstructions can provide key temporal evidence, but are also difficult to replicate across large landscapes. GLO data, in contrast, can be used to develop reconstructions across hundred of thousands to millions of hectares. New findings from GLO data have challenged past findings about the nature of the historical baseline in dry forests, but it is the role of science to continually test past findings. Refining the historical baseline should help avoid misuse of evidence, false narratives, and misdirected restoration and provide a sound scientific foundation for predicting the effects of climatic change on wildfire and forests."

Through the lens of species presence and evolutionary history

Mixed-severity fires (including high severity fires) create habitat that is necessary for species within the MNF and eastern Oregon, suggesting that high severity fires are natural and historically present, as well as necessary. High severity fires create important habitat that is very high in biodiversity, and may be rare compared to historic norms.

The evolutionary history and very existence of Black-backed woodpeckers suggests that large high-severity fires must regularly occur within their range. We are concerned that current fire suppression efforts through the region will continue to exclude high-severity wildfires (and continue despite project implementation) and threaten the viability of Black-backed woodpeckers and other species that depend on high-severity wildfire. Hutto et al. (2008) noted that:

"Without embracing an evolutionary perspective, we run the risk of creating restoration targets that do not mimic evolutionarily meaningful historical conditions, and that bear little resemblance to the conditions needed to maintain populations of native species, as mandated by law (e.g., National Forest Management Act of 1976)."

"The degree to which the black-backed woodpecker is restricted to burned forest conditions in the intermountain west is truly remarkable. Although this species has been detected outside burned forest conditions, particularly in unburned, beetle-killed forests, the numbers therein are small, and nest success therein is substantially lower than in burned forests (Saab et al. 2005). Neither Powell (2000) nor Morrissey et al. (2008), for example, found any black-backed woodpeckers in surveys of mountain pine beetle-infested mixed-conifer forests even though they located northern flickers and three-toed, hairy, downy, and pileated woodpeckers. Similarly, a regionwide bird survey across a series of unburned, beetle-infested conifer forests within the Forest Service Northern Region (Cilimburg et al. 2006) yielded only two black-backed woodpecker detections (0.46 % of 433 point counts). This is less than one-tenth of the frequency of detection in forests burned 6 yr (Saab et al. 2007), so the probability of a severe fire occurring somewhere within an entire watershed in any given 6-year window is very high. Thus, when viewed on a landscape scale, it becomes easy to imagine that a sufficiently mobile plant or animal species (e.g., fire morel [Morchella angusticeps]; jewel beetle, Buprestidae; blackbacked woodpecker) could become specialized to use a burned forest condition that is ephemeral on a local scale but always present somewhere in the larger landscape."

"…[T]he patterns of distribution and abundance for several other bird species (black-backed woodpecker [Picoides arcticus], buff-breasted flycatcher [Empidonax fulvifrons], Lewis' woodpecker [Melanerpes lewis], northern hawk owl [Surnia ulula], and Kirtland's warbler [Dendroica kirtlandii]) suggest that severe fire has been an important component of the fire regimes with which they evolved. **Patterns of habitat use by the latter species indicate that severe fires are important components not only of higher-elevation and high-latitude conifer forest types, which are known to be dominated by such fires, but also of mid-elevation and even low-elevation conifer forest types that are not normally assumed to have had high-severity fire as an integral part of their natural fire regimes.** Because plant and animal adaptations can serve as reliable sources of information about what constitutes a natural fire regime, it might be wise to supplement traditional historical methods with careful consideration of information related to plant and animal adaptations when attempting to restore what are thought to be natural regimes."

"In addition, two lines of evidence suggest that it is the more severe fires that are needed to create conditions most suitable for this fire specialist: (1) not only is the black-backed woodpecker restricted to burned forests, but its distribution within burned forests is also relatively restricted to the more severely burned conditions (Kotliar et al. 2002, Smucker et al. 2005, Russell et al. 2007, Hutto 2008); (2) black-backed woodpecker nest sites occur in locations that harbor significantly larger and more numerous trees than occur around randomly selected sites within a burn (Saab and Dudley 1998, Kotliar et al. 2002, Russell et al. 2007). **Such nesting locations would be difficult to find in forests maintained as low-density, open, park-like stands due to frequent, low-severity fire."**

"How could a species evolve to depend on a condition that occurs only infrequently? The answer lies with the distribution and abundance of such fires across space and time. **The return interval for severe fire in one location may be several hundred years, but black-backed woodpecker populations persist in a particular re for >6 yr (Saab et al. 2007), so the probability of a severe fire occurring somewhere within an entire watershed in any given 6-year window is very high.** Thus, when viewed on a landscape scale, it becomes easy to imagine that a sufficiently mobile plant or animal species (e.g., re morel [Morchella angusticeps]; jewel beetle, Buprestidae; black-backed woodpecker) could become specialized to use a burned forest condition that is ephemeral on a local scale but always present somewhere in the larger landscape."

Benefits of high-intensity wildfire

High-severity fire patches, including large patches, create very biodiverse, ecologically important, spatially rare and unique habitat, which often has higher species richness and diversity than unburned old forest; many wildlife species use this forest habitat type more than any other, and old forest species select it for foraging, while some very rare and imperiled species, such as the Black-backed Woodpecker and Buff-breasted Flycatcher, depend upon it for all habitat. In ponderosa pine and Douglas-fir forests of Idaho at 5-10 years post-fire, levels of aquatic insects emerging from streams were two and a half times greater in high-intensity fire areas than in unburned mature/old forest, and bats were nearly 5 times more abundant in riparian areas with high-intensity fire than in unburned mature/old forest (Malison and Baxter 2010). Post burn snag forests supported greater bird species richness and abundance compared to unburned old forest for at least 25 years after high-intensity fires; including for woodpeckers and flycatchers for at least 25 years after high-intensity fires (Raphael et al. 1987). Bird species richness increased for up to 30 years after high-intensity fires (Schieck and Song 2006) By 30 years after high-intensity fire, bird species richness increased 56% relative to pre-fire mature unburned forest (Haney et al. 2008). . Even old growth forest species like the Pacific Fisher benefit from such post-fire habitat for foraging (Hanson 2015). The high- intensity re-burn [high-intensity fire occurring 15 years after a previous high-intensity fire] had the highest plant species richness and total plant cover, relative to high-intensity fire alone [no re-burn] and unburned mature/old forest; and the high-intensity fire re-burn area had over 1,000 seedlings/saplings per hectare of natural conifer regeneration (Donato et al. 2009). Fishers used unlogged higher-intensity fire areas at levels comparable to use of unburned dense, mature/old forest. Female fishers demonstrated a significant selection in favor of the large, intense fire over adjacent unburned mature/old forest, and the highest frequency of female fisher scat detection was over 250 meters into the interior of the largest higher- intensity fire patch (over 12,000 acres) (Hanson 2015). White pine trees need patches of post-fire habitats created by high-severity wildfire so that Clark's nuthatches can replant their seedlings within mixed-conifer forests. The USFS analyses fail to take into account the many ecological processes and functions that are dependent on high severity wildfire—and the ecological importance of allowing areas that have experienced high severity fires to recover naturally.

Efficacy

The short-term and temporary nature of the perceived fuels reduction benefits from most project are not likely to result in meaningful changes to fire intensity, size, or severity. Most projects designed to reduce fuels note that perceived benefits are estimated to affect fire behavior for approximately 20 years. If the estimated effectiveness is only approximately 20 years, then the justification for this project is even more tenuous. For example, Rhodes and Baker (2008) found that:

"[u]sing extensive fire records for western US Forest Service lands, we estimate fuel treatments have a mean probability of 2.0-7.9% of encountering moderate-or high-severity fire during an assumed 20-year period of reduced fuels."

Current forest management is unnecessarily putting firefighters at risk by focusing on remote areas, contrary to peer-reviewed science or common sense. Gibbons et al. (2010) found that defensible space work within 40 meters [about 131 feet] of individual homes effectively protects homes from wildland fire, even intense fire. The authors concluded that the current management practice of thinning broad zones in wildland areas hundreds, or thousands, of meters away from homes is ineffective and diverts resources away from actual home protection, which must be focused immediately adjacent to individual structures in order to protect them. In addition, other studies note that the vast majority of homes burned in wildland fires are burned by slow-moving, low intensity fire, and defensible space within 100-200 feet of individual homes [reducing brush and small trees, and limbing up larger trees, while also reducing the combustibility of the home itself] effectively protects homes from fires, even when they are more intense (Cohen 2000, Cohen and Stratton 2008).

Hutto et al. 2016 note, in relation to climate change, that increased efforts towards fuels reduction would be an untenable emphasis:

"Any perceived problem with future changes in fire behavior cannot be solved by redoubling our effort to treat this particular climate change symptom by installing widespread fuel treatments that do nothing to stop the warming trend, and do little to reduce the extent or severity of weather-driven fires (Gedalof et al. 2005). Therefore, fuel management efforts to reduce undesirable effects of wildfires outside the xeric ponderosa pine forest types could be more strategically directed toward creating fire-safe communities….Fuel treatment efforts more distant from human communities may carry the negative ecological consequences we outlined earlier and do little to stop or mitigate the effects of fires that are increasingly weather driven (Rhodes and Baker 2008, Franklin et al. 2014, Moritz et al. 2014, Odion et al. 2014)."

<u>Historical documents</u>

The following are the main summary points gleaned from research BMBP did on historic documents dated from the early to mid 1900s. Clumps of higher density forests are natural and documented in early historical accounts—even within Ponderosa pine forests. A more in-depth discussion on historical documents and copies of the studies are included in our addendum to this objection.

- Grand fir and other non-Ponderosa pine species were historically well-represented on the landscape. Historical accounts of mixed conifer stands include descriptions of fir being the most abundant and dominant species in those forest types; Douglas fir and smaller percentages of Western larch were also described. Early seral species were not the dominant or most abundant components of these stands in the majority of historical accounts. Mixed conifer forests comprised large percentages of the forested landscapes in Eastern Oregon. In some watersheds, close to half of the forests were mixed conifer stands. Percentages vary according to historical document and geographic area.

- Ponderosa pine forests also contained a substantial percentage of other tree species, including Grand fir. Pure Ponderosa pine stands were rare.

- Grand fir was targeted for removal as per regional direction to foresters working on National Forests. Current estimates of Grand fir density and volume may be erroneously based on anecdotal observations that occurred after substantial proportions of fir were already removed across the landscape.

- Extensive overgrazing during the turn of the century may have created artificially open forest stands in some areas.

The USFS failed to adequately analyze the ecological negative impacts from salvage logging to aquatic and riparian resources. The USFS did not disclose or analyze the full range of best available science or scientific controversy regarding the ecological risks and impacts from post-fire logging ("salvage" logging).

Salvage logging should not be allowed under any circumstances in National Forest lands, and especially not in riparian areas. Many studies have concluded that post-logging can increase future fire risk and severity and depress regeneration (Beschta et al. 2004, Karr et al. 2004, Donato et al. 2006, Titus et al. 2007). Several scientific studies point to a suite of possible long-term problems caused by post-fire logging, including erosion, increased sedimentation, soil compaction, and negative impacts to wildlife and hydrology (Beschta et al. 2004, Karr et al. 2004, Hanson & Stuart 2005, Lindenmayer & Noss 2006). Papers by Beschta et al. (2004), Hutto (2010), and Karr et al. (2004) put forth that there is little scientific evidence to justify salvage logging on an ecological basis, and that projects on public lands should focus on other restoration activities, such as road removal. In addition, salvage logging can exacerbate or create problems with invasive species (Hanson et al. 2005, Lindenmayer & Noss 2006). The wealth of scientific studies done on post-fire logging have come to an overwhelming consensus that post-fire logging has extremely negative impacts on numerous species, sensitive ecosystems, snags and downed wood (both very important for wildlife habitats), water quality, and forest regeneration. Richard Hutto, in his study Towards Meaningful Snag-Management Guidelines for Postfire Salvage Logging in North American Conifer Forests (2006) goes so far as to state: **"I am hard pressed to find any other example in wildlife biology where the effect of a particular land-use activity is as close to 100% negative as the typical postfire salvage-logging operation tends to be."**

Burned areas are best left to their own natural recovery processes. Wildfire should be restored to National Forest lands wherever possible, particularly in riparian areas. Several studies also showed that post-fire logging decreases the abundance and diversity of native plant recruitment. Post-fire logging and post-fire replanting can negatively impact forests' ability to regenerate, which can facilitate non-native species establishment and spread by creating spatial and ecological openings (Donato et al. 2006, Lindenmayer & Noss 2006, Titus et al. 2007). Titus et al. (2007) looked at vegetation in salvage-logged and replanted plots vs. vegetation in non-salvaged logged and unplanted plots in the blast zone of the Mount St. Helens eruption. They found that salvaged logged and replanted areas had lower herb and shrub diversity and richness, and more bare areas and moss than un-salvaged areas.

Post-fire logging can exhaust the natural replacement seed banks if plants begin to germinate following fire but then are destroyed by logging activity, and so negatively impact forests' ability to regenerate, which can facilitate non-native species establishment and spread by creating spatial and ecological openings (Donato et al. 2006, Lindenmayer & Noss 2006, Titus et al. 2007). Post-fire logging can also exhaust the natural replacement seed banks if plants begin to germinate following fire but then are destroyed by logging activity (Donato et al. 2006, Lindenmayer & Noss 2006). This is particularly true in areas where the remaining slash is burned (Keeley 2006), or when regeneration burns are used to promote the germination of particular varieties of commercial tree species (Lindenmayer & Noss 2006). There is no scientific evidence to justify salvage logging on an ecological basis, and projects on public lands should focus on truly restorative activities, such as road removal. Numerous scientific studies point to a suite of possible long-term problems caused by post-fire logging, including erosion, increased sedimentation, soil compaction, and negative impacts to wildlife and hydrology. Post-fire logging can also increase future fire risk. Donato et al. (2006) found that post-fire logging actually increases the risk of future high intensity fires, particularly when slash is left on the ground. Thompson & Spies (2010) found that areas that had previously experienced burning and "salvage" logging after the 1987 Silver Fire in southwestern Oregon had more extensive crown damage during the 2002 Biscuit fire than areas that had not been "salvage" logged after the Silver Fire. Post-fire logging can also negatively affect forests' ability to regenerate, which can facilitate non-native plant species' establishment and spread. Post-fire logging can also exacerbate or create problems with invasive species through other mechanisms, such as logging equipment spreading invasive plant seeds.

In addition, post-fire logging can increase the edge affects in forest stands adjacent to burned areas (Hanson & Stuart 2005). Forest edges are more susceptible to disturbances such as wind and solar radiation (Hanson & Stuart 2005) and so may be at greater risk of non-native invasions. Hanson and Stuart 2005 looked at the effects of salvage logging on veg. composition in adjacent forest edges & interiors. They found that two out of three exotic plants surveyed were more abundant in edges next to salvaged area compared to edges next to unsalvaged areas. Specifically, Bromus techtorum and Erechtites glomerata were more abundant in edges next to salvaged areas. Also, in forest interiors adjacent to salvaged areas, native plant diversity decreased compared to non-salvaged. Overall, they found that salvage logging increased the influence of the edge effect of the burn area by 15-30 meters. Post-fire logging and its relationship with invasive plants needs more study, but it is thought that many of the same mechanisms which facilitate invasions in other types of logging projects would also play a role in salvage logging. This includes roads as agents of dispersal and propagule pressure, logging equipment and trucks as invasive seed vectors, soil compaction favoring non-natives, and changes to canopy cover and microclimates, possibly favoring non-natives (Beschta et al. 2004, Karr et al. 2004, Keeley 2006).

The BMFPR failed to include adequate objectives, standards, and guidelines to define if, how, when, and why management should occur within each burn severity class and burn patch size classes to ensure the ecological benefits (i.e., heterogeneity and increased habitat quality for old forest species) are maintained. The BMFPR should have included much stronger objectives, standards and guidelines that address salvage logging and reforestation practices. Among other things, the FPR need to address the appropriateness of salvage logging and reforestation for those fires for which the effects fall within desired conditions. Impacts to soils, stream sediment inputs, and aquatic resources should be addressed and protective measures outline clearly. The removal of burned trees (and the ecological benefit they posses) impedes the development natural processes, as does intensive post-fire planting. These issues need to be addressed in the forest plan. These actions are in direct conflict with the development of ecological condition. The belief that the "acceleration" of tree growth is necessary to meet the desired condition to develop large trees in other seral stages needs to be reassessed in light of best current science, and should not interfere with ecological integrity. Ecological integrity is the foundation of Forest Planning Rules and applies to all stages of forest development.

In an Open Letter to Members of Congress from 250 Scientists Concerned about Post-fire Logging (2013), scientists state that **"Post-fire habitats created by fire, including patches of severe fire, are ecological treasures rather than ecological catastrophes, and that post-fire logging does far more harm than good to the nation's public lands."**

The alteration of unique and crucial post-fire habitat may result in the degradation of destruction of characteristics necessary for species that depend on post-fire habitat. The repeated and widespread loss of this type of habitat may have a negative effect on population trends and habitats for a number of listed, sensitive, at-risk species, MIS, or other special status species. This may include species such as: Townsend's big-eared bats and other bat species; Peregrine falcon; wolverine; Canada lynx; Pacific fisher; American marten; Bald eagle; Lewis's woodpecker; Black-backed woodpecker; Three-toed woodpecker; special-status owls; Neotropical songbirds; Bull trout; Redband trout, steelhead, Chinook salmon; Columbia spotted frogs. For example, Black-backed woodpeckers are negatively affected through cumulative impacts from post-fire logging. They may also be negatively affected by the alteration of tree species composition and future quality of habitat from replanting. Black-backed woodpeckers rely on dense snag habitats that have been recently burned and on the Bark beetles that move in afterwards. In addition, species such as Pacific fishers that rely on complex mature forests have also evolved in the presence of fire-created habitats and have been found to utilize them extensively.

The Forest Service needs to do away with post-fire ("salvage") logging on all National Forests. Post-fire logging is an outdated, ecologically destructive practice that harms important and delicate habitats.

Post-fire areas are too ecologically valuable to sacrifice for marginal economic benefit to a few individuals and corporations while the public pays for the costs of ecological degradation. Post-fire logging needs to be eliminated on public lands, and should not be included as acceptable logging practice within the BMFPR.

Proposed resolutions:

Withdraw the BMFPR or do a SEIS that contains:

- Purpose and need statements and adequate range of alternatives that are not overly narrowly construed so as to preclude consideration and selection of more environmentally friendly analyses

- Analyses that include a full range of best available science and analyses/disclosure of scientific controversies
- Adequate analyses regarding ecological risks and issues associated with logging, livestock grazing, roads, wildlfire suppression, and other related issues.

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BIGHORN SHEEP SECTION

I. THE FOREST SERVICE HAS FAILED TO CONSIDER THE CONSEQUENCES OF HABITAT FRAGMENTATION ON BIGHORN SHEEP DIVERSITY AND GENETIC FITNESS IN VIOLATION OF NEPA

Throughout their range, bighorn sheep populations declined by an estimated 98% between the pre-settlement era and the 1950s, with this abrupt crash attributed primarily to respiratory disease caused by livestock pathogens. Remnant herds surviving to the 1950s were small, isolated, and vulnerable to stochastic disturbance and local extirpations.

Extensive restoration efforts undertaken since the 1950s have recovered bighorn sheep populations to approximately 70,000 Westwide, or 5% of estimated historic numbers. Reintroduced herds originated from a small number of source populations, with these source populations often far removed from the location of herd reestablishment. Reintroduced populations did not originate in, and are not adapted to the environments into which they are transplanted.

Both remnant and reintroduced herds typically remain in isolation on the landscape, with limited opportunity for interaction or exchange between herds. Bighorn sheep evolved with a metapopulation structure governing social interactions and genetic exchange, wherein small herds of wild sheep regularly intermingled with other small herds distributed across the landscape. Metapopulations of bighorn sheep are now rare, however, as habitats are fragmented by roads, developments, unnatural vegetation resulting from decades of fire suppression, and commercial livestock operations.

Wildlife managers often opt to limit the expansion of bighorn sheep herds to limit potential contact with domestic sheep or with other bighorn herds which may carry livestock pathogens originating in domestic sheep, engaging hunters to harvest ewes to reduce birth rates within a population or transplanting sheep from a population which managers have deemed too large. Wildlife managers are likewise reluctant to mix individuals from different populations due to the potential for disease transfer to or from bighorn sheep transplanted to an extant population, with herd supplementation increasingly uncommon. Ongoing herd isolation and a lack of management intervention to perform genetic rescue, following the widespread die-off of bighorn sheep and consequent loss of diversity during the settlement of the West, has resulted in much reduced genetic diversity within and among bighorn sheep populations.

Genetic erosion results in reduced fitness, reduced breeding success, reduced adaptability, and the perpetuation of deleterious alleles, all of which contribute to the loss of viability over the long term. The EIS has failed to assess the consequences of genetic isolation on the landscape, instead focusing on the potential for disease transmission from domestic sheep and goats to wild sheep as the only factor contributing to bighorn sheep viability. The EIS has likewise failed to consider the cumulative effects of such isolation on public lands across the West, where the Forest Service and BLM have engaged in or allowed landscape-fragmented activities, and have deliberately maintained small, isolated populations of bighorn sheep.

While the EIS adopts a minimum viability threshold of 30-50 individuals, it later relates a case wherein a population of 90 individuals was extirpated following the introduction of livestock pathogens into the herd, demonstrating that viability estimates developed by Singer, Berger, and Zeigenfuss *et al* do not stand as an accurate estimate of the likelihood of persistence of bighorn populations over time. These thresholds, instead, are likely to contribute to inbreeding which reduces genetic fitness, and may lead to stochastic extirpation as a result of environmental factors.

Effective population sizes from bighorn sheep are reduced due to dominance behaviors by rams, which limits the number of males breeding each year. This results in a breeding population that is much smaller than the census population. Montana's Bighorn Sheep Conservation Strategy states:

> "*Many of Montana's 45 bighorn sheep populations are relatively small, isolated, and were founded with few individuals. Because of small founding size and low abundance, many are likely to have low Ne, making them susceptible to the random loss of genetic variation, inbreeding, and the random increase in the frequency of harmful genetic variation (deleterious alleles). Loss of genetic variation, especially particular variants (alleles) is also expected to result in reduced adaptability and may also increase the susceptibility of the animals to particular parasites and diseases. Furthermore, because of their small size and isolation over time, the amount of inbreeding in many populations will increase and eventually result in inbreeding depression, which is defined as the loss of fitness in inbred individuals. All of these factors act concurrently to increase the risk of extinction (Berger 1990), and many have been observed in bighorn sheep populations (Hogg et al. 2006; Luikart et al. 2008a).*[5]

In a broader assessment of MVP, researchers at Liverpool University addressed the disparity between MVP values adopted by wildlife managers and those biologists assert are necessary for the persistence of species over the long term:

> *Current evidence from integrated work on population dynamics shows that setting conservation thresholds at a few hundred individuals only is a subjective and non-scientific decision, not an evidence-based biological one which properly accounts for the synergistic impacts of deterministic threats (Brook et al., 2008; Visser, 2008). Many existing conservation programs might therefore be managing inadvertently or implicitly for extinction – a clearly illogical and counter-intuitive aspiration. If practitioners cannot justify using conservation triage to alleviate problems associated with unrealistic targets, where small, inbred populations are neglected in preference to more viable options, then they must manage for biologically relevant MVPs at least 5000 adult individuals (or 500*

[5] Montana Fish, Wildlife and Parks. (2010). Montana Bighorn Sheep Conservation Strategy.

simply to prevent inbreeding) whilst addressing the concomitant mechanisms of decline (Balmford et al., 2009).
One partial remedy is for prioritisation of conservation funds to be based on indices of the distance of species population sizes from MVP. So for example, a small population of 50 individuals will score 0.01 (percent of 5000), and the inverse of this can be used as a modifier for fund allocation. A simple scoring system such as this can be the basis of a decision-framework for threatened species within a particular management region, and conservationists can factor in other considerations such as likelihood of success and economic value (see Joseph et al., 2009). Indeed, both demographic and evolutionary MVPs have been, and continue to be influential to real-world conservation planning (Sarkar et al., 2006). As with the use of biodiversity surrogates in conservation planning (Pressey, 2004), rules of thumb on species' demographic and genetic requirements are often the only option when dealing with the current crisis under conditions of great uncertainty and severe resource constraints. Further, minimum viable population sizes are legitimate and concrete targets that policy-makers can digest and implement. While scientists debate MVP variance, the extinction crisis deepens. Thresholds at 500/5000 are communicated more effectively to policy-makers who do not have the time to read the extensive literature surrounding viability. Indeed, the lack of communication between science and conservation policy can be improved through dissemination of generalities (such as thresholds) that can be formulated as policy (see Gibbins et al., 2008). If, on the other hand, scientists regard MVP thresholds to be too high to implement practically, then what are the alternatives? Is managing for hundreds of individuals over short time-frames sensible? If biologists believe that meta-populations numbering less than a few thousand individuals are capable of survival in a globally changing world, then this needs to be argued with relevant empirical and genetic data as support. Other than that, a more explicit and honest acceptance of the biological trade-offs implied in ignoring MVPs on logistical grounds is needed, for credibility's sake. [6]

In considering only the likelihood that a bighorn sheep population will be extirpated as a result of disease, the Forest Service, both in the Blue Mountains Forests and on National Forest lands Westwide, is failing to assess all known factors impacting bighorn sheep viability, in violation of procedural directives prescribed by NEPA. The Forest Service ignores a broad catalogue of research addressing the genetic needs of species which have been impacted by anthropogenic activities, and instead adopts an untenable position of maintenance of only minimum populations necessary to prevent total extirpation of bighorn sheep in the short term. The Forest Service's actions, in authorizing habitat-fragmenting activities such as cattle grazing, contribute to genetic losses conferring reduced fitness and a diminished capacity to adapt to changing environmental conditions, including those associated with climate change.

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[6] Traill, L. W., Brook, B. W., Frankham, R. R., & Bradshaw, C. J. A. (2010). Pragmatic population viability targets in a rapidly changing world. *Biological Conservation*, *143*, 28 – 34

In maintaining, and even increasing, barriers to bighorn sheep dispersal through the maintenance of cattle allotments on top of and between extant populations, the Forest Service is hamstringing the recovery of bighorn sheep populations' genetic fitness. The EIS must consider the full suite of literature concerning MVPs, and must use these as the basis for an assessment of the likelihood of bighorn sheep persistence over the long term, with full consideration of all factors limiting or having the potential to limit bighorn sheep recovery. The EIS must consider bighorn sheep MVP on the Blue Mountains forests in the context of the precipitous declines of bighorn sheep during the era of Western settlement, when catastrophic losses of genetic diversity occurred, and it must analyze the cumulative effects of genetic isolation perpetuated by BLM and Forest Service activities Westwide.

II. THE FOREST SERVICE HAS FAILED TO CONSIDER THE IMPACTS OF DISPLACEMENT AND CATTLE-BORNE PATHOGENS ON BIGHORN SHEEP POPULATIONS IN VIOLATION OF NEPA

Cattle allotments administered by BLM and the Forest Service overlap the majority of bighorn sheep occupied, potential, and historic habitat in and near the Blue Mountains forests. While the EIS states that RSV can negatively impact bighorn sheep populations, it fails to connect RSV to cattle, from which it originates. It likewise fails to take a hard look, as required by NEPA, at the potential for cattle to impact bighorn sheep in other ways. BVD is another virus implicated in bighorn sheep population declines, yet this is not mentioned in Blue Mountains planning documents.

Cattle displace bighorns (bighorn sheep avoid cattle), restricting access to forage and water and increasing the energetic costs to wildlife when native species are feeding, migrating, or otherwise utilizing landscapes occupied by cattle. Cattle spread invasive and noxious weeds which degrade bighorn habitat, and contribute to soil disturbance which causes erosion and promotes the establishment of invasive species. The EIS must assess the potential for cattle to transmit pathogens to bighorn sheep, the impacts of this transmission in populations long-affected by Mycoplasma ovipneumoniae and other livestock pathogens, and alternatives which would reduce the likelihood of cattle-borne diseases passing to bighorn sheep. The EIS must likewise assess habitat degradation resulting from authorized cattle grazing.

III. THE PROPOSED ACTION WILL NOT PROVIDE FOR VIABLE, WELL-DISTRIBUTED POPULATIONS OF BIGHORN SHEEP, AND THEREFORE IS NOT IN COMPLIANCE WITH NFMA

NFMA requires that the forest planning regulations specify guidelines which "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives." 16 U.S.C. §1604(g)(3)(B). To meet this statutory requirement, the 1982 Forest Planning Rule requires the Forest Service to manage fish and wildlife habitat in order to maintain viable populations of species in the planning area. 36 C.F.R. § 219.19 (1982).

A recent court ruling in Idaho addressed NFMA's viability requirements:

> *"The Forest Service argues it is acting consistently with the Forest Plan by maintaining the viability of the bighorn populations Forest-wide. It asserts that, even if the domestic sheep grazing does result in the South Beaverhead population dying-off due to pneumonia outbreak, it nevertheless is and will maintain compliance due to the health of the bighorn populations Forest-wide...the Forest Service argues also that extirpation of the small herd would not jeopardize the viability of the bighorn population Forest-wide."*
>
> *"The Forest Service asserts it is in compliance with the Forest Plan requirement to maintain viable populations of sensitive species throughout the Forest. It argues that, because the South Beaverhead population is not viable, it does not matter, under the Forest Plan, if it is extirpated—i.e. the risk of extirpation does not violate the Forest Plan. In other words, the Forest Service asks the court to the measure the Forest Plan's maintenance requirement not herd-by-herd, but by considering the sum of all of the individual bighorn populations Forest-wide. The sum would necessarily include the South Bighorn population—unless or until they are extirpated. This circular logic is untenable."*
>
> *"The meaning of "maintain" underscores the Court's point. The Oxford English Dictionary contains numerous definitions for maintain, including: "to sustain (life) by nourishment," "to keep up, preserve, cause to continue in being (a state of things, a condition, an activity, etc.); to keep vigorous, effective, or unimpaired; to guard from loss or deterioration." Thus, in no way do the common definitions and understandings support neglect or deterioration of a population of animals (taken as a whole, or in part) that the Forest Service is mandated to maintain."*[7]

The Mud Creek allotment lies within 8 miles of occupied bighorn sheep habitat, and is connected by highly suitable habitat to bighorn sheep core herd home ranges. The North End allotment is within 10 miles of occupied bighorn sheep habitat, and precludes the use of suitable bighorn sheep habitat along the South Fork Walla Walla river by bighorn sheep.

- BHSM-1S and BHSM-2S ..."shall not be authorized where effective separation from bighorn sheep cannot be reasonably maintained"

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[7] Case 1:17-cv-00434-CWD

These standards are ambiguous, and do not stand as an effective protection measure for bighorn sheep. Foray behavior is characteristic of bighorn sheep, and the species is both generally gregarious and attracted to domestic sheep. Bighorn sheep will cross habitats deemed "unsuitable" for extended occupation, including forested and flat landscapes, during forays. They will enter novel habitats, where their presence is unprecedented and unexpected.

Domestic sheep are typically grazed in such numbers that herders present typically cannot observe all sheep at once, resulting in opportunities for interspecies contact. Best Management Practices, including the use of guard dogs, have not been demonstrated to mitigate risks to bighorn sheep, and have been found by the courts to be inadequate measures of reducing disease risk to bighorn sheep (ID Civ. No. 09-0507-E-BLW). The Forest Service must clarify that BMPs are not effective at preventing contact, and will not be utilized to ameliorate risks in areas where contact may occur. Further, the killing of bighorn sheep observed in close proximity to domestic sheep is not an acceptable means of maintaining separation. This must be clarified within the planning documents.

While these standards are purported to stand as solid measures to ensure the persistence of bighorn sheep on the landscape, they are inadequate, unclear, and unenforceable.

- BHSM-3S "Permitted domestic sheep and goats shall be counted onto and off of the allotment by the permittee. A reasonable effort to account for the disposition of any missing domestic sheep or goats must be made by the livestock grazing permittee and reported back to the Forest Service within 24 hours."

Domestic sheep must be counted on and off of each allotment by a Forest Service official, and throughout the grazing season by a herder or permittee, in order to maintain with certainty all sheep in a band. A single count by a permittee is likely to be inaccurate, and permittees have an interest in withholding information on sheep which are unaccounted for at the end of a grazing rotation.

Failure to detect, report, or search for lost sheep until the band is leaving an allotment means that sheep separated from a band may wander for a month or more undetected, with no indication of where on an allotment the sheep became separated from the main band, or where it may have travelled following separation. Lost sheep are likely to be assumed to have been killed by predators, and therefore will not be considered by a permittee or agency officials to warrant extensive searches.

What is a "reasonable effort to account for" lost sheep? Does this include one day of retracing a band's steps? Returning to an area where predator scatter occurred days or weeks before to search for living animals? Using drones or light aircraft to survey an area? Posting signs asking the public to report sheep observed on the landscape before simply moving on to the next allotment? Under this language, a search for strays isn't required, and it is likely lost sheep will simply be written off as having been killed by predators without any evidence that that is the case. Clarification is necessary, and standards must be amended to prevent stray domestic sheep from contacting and transmitting pathogens to bighorn sheep.

Additional standards are necessary to promote and maintain viable herds of bighorn sheep and to enhance bighorn sheep distribution across the landscape:

- Allotments or portions of allotments vacated for the protection of bighorn sheep must be permanently closed. Where a permittee voluntarily waives a permit back to the agency for resource protection, the permit shall not be reissued.

Maintaining allotments as livestock forage reserves for use during times of drought, or when fire renders an allotment unusable, displaces wildlife dependant on vacant allotment forage. Native species are likewise impacted by drought, fire, and other atypical environmental conditions, yet these species have few alternative habitats available when their typical habitats are impacted. By contrast, permittees may secure alternative grazing on private lands, or may retain livestock on their base property and supply commercial feed. A permittee is not guaranteed forage in any given season, and the Forest Service is under no obligation to provide compensation when natural conditions render an allotment unusable. The provision of needed forage to wildlife during these times is necessary to maintain viable populations of native species. Native species must be prioritized, and allotments made vacant for the protection or enhancement of wildlife populations must be permanently closed to grazing.

- Vegetation manipulation projects (timber thinning, controlled burns) in bighorn sheep occupied or potential habitat must be preceded by an analysis of potential impacts to bighorn sheep.

Effects of vegetation manipulation to the permeability of the landscape and the suitability of the landscape for bighorn sheep must be assessed. While the Forest Service asserts that it has no control over activities conducted on private lands, it does have the capacity to limit the impacts of those activities on species occurring on the Forest. The maintenance of barriers (thick timber) at the public/private interface where domestic sheep occurring on private lands pose a risk to bighorn sheep and the enhancement of habitats on the interior portions of National Forest lands to draw bighorn sheep away from the interface are feasible measures to reduce risk from livestock on private lands. As these impacts are not likely to be considered during site-specific activities, standards compelling the analysis of these impacts must be included in the Forest Plan.

ROADS SECTION

I. The plan components in the proposed land management plans are inconsistent with NFMA and the 1982 planning regulations.

We submitted comments outlining how the plan components in the proposed land management plans fail to establish adequate desired conditions, objectives, or standards and guidelines related to road management (BMBP's comments on Aquatic Section of Proposed FP Revision DEIS pgs. 11, 12, 35, 36, 38, and 55). Our comments urged the Forest Service to incorporate stronger plan components for road-related forest-wide standards and guidelines, including stronger plan components to improve watershed conditions. In light of the impacts from forest roads (see section below), our comments noted it is nearly impossible to achieve ecological goals without thoroughly addressing those impacts. This is especially true in light of the lack of improvement in watershed condition after 10 years of proposed actions under the plan.

Under this draft Record of Decision, however, the revised plan components related to road management still do not comply with NFMA or the 1982 planning regulations because they fail to provide necessary resource protection from roads, contain inadequate objectives, set inadequate standards and guidelines, and lack a sufficient monitoring program.

A. Resource Protection

The 1982 planning regulations contain numerous management prescriptions requiring forest plans to provide for resource protection. 36 C.F.R. § 219.27. The road-related plan components in the Umatilla, Malheur, and Wallowa-Whitman revised land management plans fail to provide those resource protections in violation of the regulations.

For example, the 1982 planning regulations require forest plans conserve water resources and protect streams, streambanks, shorelines, lakes, wetlands, and other bodies of water. 36 C.F.R. §§ 219.27(a)(1), 219.27(a)(4). Objective 1.11 (Water Quality) sets a goal of establishing water quality restoration plans in 5-7 watersheds, and 200-280 stream miles. Umatilla LMP at 126. *See also* Malheur LMP at 43 (similar objective for improving water quality); Wallowa-Whitman LMP at 130 (same). It fails to include any road-related objectives for conserving water resources or protecting water quality, despite best available science demonstrating that forest roads are the primary cause of water quality degradation on the Blue Mountain national forests.

As for standards and guidelines for watershed function, the two forest-wide standards related to roads fail to require the needed improvements in water quality by moving towards a smaller, economically and environmentally sustainable road system. *See* Umatilla LMP at 130 (KW-1S, applying only to waters that are ESA critical habitat containing listed species, and requiring no net increase in system roads that are functioning properly (1 mile road-related risk reduction for every new mile of road construction), a net decrease in system roads where they are functioning at risk (1.5 miles road-related risk reduction for every new mile of road construction), and net decrease where impaired (2.0 miles of road-related risk reduction for every new mile of road construction)); *id.* at 131 (RE-4S, requiring the agency to minimize – but not prevent – hydrologic connectivity and sediment delivery from roads and trails). *See also* Malheur LMP at

51-52, 133 (same plan components); Wallowa-Whitman LMP at 134, 135 (same). Given the existing miles of forest roads on the Blue Mountain national forests and inadequate funding to maintain these roads, these plan components fail to conserve water resources and protect water quality as required by the 1982 planning regulations.

What's more, the road-related Guidelines for MA 4B Riparian Management Areas actually allow construction of new roads and trails. *See* Umatilla LMP at 150 (RF-1G, allowing new roads and trails to be constructed within riparian management areas if no other feasible alternative exists), (RF-2G, allowing temporary roads, including stream crossings, in riparian management areas); Malheur LMP at 152; Wallowa-Whitman LMP at 155. This road management approach *within* riparian areas improperly prioritizes timber interests and motorized use above improving and maintaining watershed conditions. In light of best available science showing the extensive adverse impacts of forest roads to water quality, these plan components fail to ensure water quality is maintained, contrary to the 1982 planning regulations.

As another example, the land management plans lack any road-related plan components to prevent or reduce serious, long lasting hazards and damage from pest organisms as required by the 1982 planning regulations. 36 C.F.R. § 219.27(a)(3). Objective 1.5 (Invasive Species) states a goal to reduce current infestations of invasive plant species on 7,000 acres. Umatilla LMP at 125; Malheur LMP at 127; Wallowa-Whitman LMP at 130. This is the only objective addressing invasive species in the Umatilla and Wallowa-Whitman land management plans. The lack of any road-related objectives to prevent or reduce invasive species is alarming in light of best available science showing that forest roads are one of the main vectors of invasive species. (BMBP's Comments on Aquatic Section of Proposed FP Revision DEIS pg. 49). Standard IS-6S requires equipment used outside the limits of the road prism to be weed- and pest-free, but it fails to address the spread of invasive species from forest roads. Umatilla LMP at 133; Malheur LMP at 137; Wallowa-Whitman LMP at 139. Similarly, the land management plans lack any road-related plan components to conserve soil resources. 36 C.F.R. § 219.27(a)(1). *See, e.g.*, Umatilla LMP at 126.

The 1982 planning regulations require forest plans include measures for preventing the destruction or adverse modification of critical habitat for threatened and endangered species. 36 C.F.R. § 219.27(a)(8). But the road-related land management plan standards and guidelines in these revised land management plans focus on protecting only *occupied* habitat, as opposed to *critical habitat* that has been designated because it is necessary to the recovery of ESA listed species (even if it is not currently occupied by those listed species). *See* Umatilla LMP at 133 (FLS-9S, "Road maintenance and new road construction shall be designed to minimize adverse effects to the occupied habitat of threatened, endangered, proposed, or candidate plant species."); *id.* (FLS-10G "New road construction should be designed to minimize adverse impacts to the occupied habitat of sensitive plant species to avoid a trend towards federal listing."). *See also* Malheur LMP at 135-136; Wallowa Whitman LMP at 137-138. What's more, these road-related standards and guidelines only require the Forest Service to minimize impacts to the occupied habitat, not prevent the destruction or adverse modification of this habitat.

None of the plan components in the land management plans address the requirement that forest plans provide that all roads are planned and designed to re-establish vegetative cover on the disturbed area within a reasonable period of time, not to exceed 10 years after the termination of a contract, lease or permit, unless the road is determined necessary as a permanent addition to the National Forest Transportation System. 36 C.F.R. § 219.27(a)(11).

B. Inadequate Objectives

The rules define "objective" as a "concise, time-specific statement of measurable planned results that respond to pre-established goals" and "forms the basis for further planning to define precise steps to be taken and the resources to be used in achieving identified goals." 36 C.F.R. § 219.3. Objectives set forth in the revised land management plans are inadequate because, *inter alia*, they lack time-specific parameters, fail to achieve or even work towards desired conditions, or are completely missing.

For example, Objective 1.1 (Watershed Function) sets a goal to increase aquatic habitat connectivity through culvert replacement of 75 culverts, 68 stream miles. Umatilla LMP at 124. *See also* Malheur LMP at 41 (setting an objective to replace 90 culverts, 143 stream miles); Wallowa-Whitman LMP at 129 (setting an objective to replace 90 culverts, 135 stream miles). These objective fails to include any timeframe for the goal, contrary to the definition of an objective. If these objectives are meant to apply over the life of the land management plan, they are woefully inadequate to work towards the forest's desired conditions. On the three forests, "more than 1,285 culverts block or impair access by aquatic species to more than 3,700 miles of streams within the three national forests in the Blue Mountains." Wallowa-Whitman LMP at 34. These objectives – meant to form the basis of achieving identified goals – would address less than 20% of the culverts blocking aquatic fish passage on the three forests.

Objective 1.1 (Watershed Function) sets a goal to treat 30-35 miles of road surface annually to reduce road-related sedimentation. Umatilla LMP at 123; Malheur LMP at 42; Wallowa-Whitman LMP at 128. Based on current conditions on the Blue Mountain national forests, these numbers are also woefully inadequate to work towards the forest's desired conditions and goals.

Objective 2.5 (Roads and Trails Access) sets a goal to "[m]aintain the road system for safe and efficient travel and for the protection, management, and use of National Forest System lands," with an objective road maintenance of 200 miles of ML 4 or 5 roads, 200 miles of ML 3 roads, and 140 miles of ML 2 roads on the Umatilla National Forest. Umatilla LMP at 126. The same objective on the Malheur National Forest sets an objective road maintenance goal of 250 miles of ML 4 or 5 roads, 38 miles of ML 3 roads, and 1,025 miles of ML 2 roads. Malheur LMP at 128. For the Wallowa-Whitman National Forest the objective road maintenance goal is 90 miles of ML 4 or 5 roads, 170 miles of ML 3 roads, and 150 miles of ML 2 roads. Compared to the number of system road miles that exist on these forests, this objective addresses only a tiny fraction of the road system and is thus extremely inadequate to maintain the road system for safe and efficient travel and for the protection, management, and use of National Forest System lands.

Although the number of system road miles on each of the forests is not disclosed in the Forest Service's analysis, but based on a Region 6 summary of the forest's travel analysis reports the Umatilla has 2,399 miles of open roads (ML 2-5) and 2,188 miles of closed roads; the Malheur has 5,757 miles of open roads and 3,870 miles of closed roads; and the Wallowa-Whitman has

4,574 miles of open roads and 4,451 miles of closed roads. Despite more than 10,000 miles of ML 1 roads existing on the three forests, ML 1 roads are conspicuously absent from Objective 2.5 and any other forest plan components. Closed roads remain on the landscape, continue to have adverse impacts, and do still requirement maintenance. Plus, it is unclear whether the forests have adequate funding to even achieve the very low goals set in Objective 2.5. The allocated road maintenance budget provides approximately 20 percent of the required annual maintenance funds needed to adequately maintain the current open road system for national forests in the Blue Mountains. Malheur LMP at 83.

Finally, some plan components are completely missing. For example, the land management plans lack any objectives, or standards and guidelines to work towards Desired Condition 2.5 that "[r]oad systems are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal effect on aquatic and terrestrial systems, and are in balance with available funding." Umatilla LMP at 84 (including desired conditions to identify roads needed for the long term and investments are made to minimize negative impacts on the ecosystem; identify roads for long-term use but that are not currently funded for adequate maintenance to be stored; and meet anticipated future access requirements by using travel analysis reports to inform travel management decisions).

C. Inadequate Standards and Guidelines

The 1982 planning regulations require the establishment of qualitative and quantitative standards and guidelines to attain a plan's stated goals and objectives. 36 C.F.R. § 219.1 to 219.3. As noted elsewhere, because guidelines have not been interpreted as mandatory, standards are the only planning component that can adequately insure the protection mandated in NFMA.

Glaringly absent from any of the land management plans are standards for road density. *Compare* revised land management plans *with* FEIS at 28 (describing road density standards applied in the 1990 Forest Plans). Our comments highlighted our concerns about the lack of road density standards (BMBP's comments on Aquatic Section of Proposed FP Revision DEIS pg. 36). We noted that road density is a critical factor for wildlife, and that densities over 1 mile per square mile cause negative impacts to wildlife (BMBP's Comments on the Aquatic Section of Proposed FP Revision DEIS pg. 33 and 34) The Forest Service's own data reveals that road density on all three forests is much greater (2.4 mi/sq mi, 3.2 mi/sq mi, 4.2 mi/sq mi) than what is considered tolerable for ecological health (1 mi/sq mi). Omitting any standards or guidelines to address road densities is unreasonable, arbitrary and capricious, and contrary to the 1982 planning rules requiring forest plans provide for adequate fish and wildlife habitat to maintain viable populations of existing native vertebrate species and provide that habitat for species is maintained and improved to the degree consistent with multiple-use objectives. 36 C.F.R. § 219.27(a)(6).

The road-related standards that do exist fall short of what is required by the 1982 planning regulations, many of which are outlined above. For example, standard IS-6S requires equipment used outside the limits of the road prism shall be weed- and pest-free. Umatilla LMP at 133. Best available science shows that roads are major vectors for the spread of invasive species. By only focusing on equipment operating outside the road prism, this standard is inadequate to prevent or reduce damage and spread of invasive species as required by 36 C.F.R. § 219.27(a)(3).

D. Inadequate Monitoring

The 1982 planning regulations require monitoring and evaluation "to determine how well objectives have been met and how closely management standards and guidelines have been applied." 36 C.F.R. § 219.12(k). Monitoring requirements must provide for a quantitative estimate of performance; documentation of measured prescriptions and effects, including significant changes in productivity of the land; and documentation of costs associated with carrying out the planned management prescriptions as compared with the costs estimated in the land management plans. *Id.* § 219.12(k)(1)-(3). Our comments urged the Forest Service to improve the monitoring plan components for roads. (BMBP's Comments on Aquatic Section of Proposed Forest Plan Revision DEIS pgs. 37 and 38). But the Forest Service's monitoring parameters for roads still fail to comply with the 1982 planning regulation's requirements.

For example, the proposed monitoring questions in Table 44, monitoring plan framework 7 for assessing watershed function are too vague and general to elicit any specific information to demonstrate improvements. Malheur LMP at 164 ("Are watershed/aquatic restoration projects (e.g., road decommissioning, passage improvements, riparian stream habitat improvements) being implemented at a rate consistent with Forest Plan objectives?"). *See also* Umatilla LMP at 163; Wallowa-Whitman LMP at 167. They fail to monitor for quantifiable, numeric results. And as noted elsewhere, these monitoring questions are based on inadequate objectives that lack numeric goals and do not work towards Desired Condition 2.5 ("Road systems are safe and responsive to public needs and desires, are affordable and effectively managed, have minimal effect on aquatic and terrestrial systems, and are in balance with available funding"). Without a numeric objective, standard or guideline to decommission a certain number of road miles annually, the parameter measuring "annual accomplishments" in terms of, "e.g., road miles decommissioned" is meaningless.

<u>Suggested Remedy</u>: Revise the road-related plan components to comply with the 1982 planning regulation requirements by providing necessary resource protection from roads, modifying objectives to be consistent with the purpose of an objective and to achieve desired conditions, revising standards and guidelines, and include a monitoring plan with meaningful timelines and parameters that enables the responsible official to determine if a change in plan components is needed.

II. The plan components are inconsistent with the Forest Service's own rules and policy regarding roads management.

Planning criteria are meant to guide the forest planning process and may be derived from laws, Executive Orders, regulations, and agency policy as set forth in the Forest Service Manual. 36 C.F.R. § 219.12(c). Under subpart A of the agency's Travel Management Rules, the Forest Service has a duty to right-size its road system by considering road recommendations from travel analysis reports, identifying the minimum road system, and prioritizing unneeded roads for decommissioning. *See* 36 C.F.R. § 212, Subpart A (Administration of the Forest Transportation System).

We outlined in our comments how roads on the national forests in the Blue Mountains are economically and environmentally unsustainable, and that the Forest Service missed an opportunity to take needed steps to right-size its road system in the context of the forest plan revisions. (BMBP's Comments on Aquatic Section of Proposed FP Revision DEIS Comment pg. 34 and 60). We applaud the Forest Service for including a reference to the forest's travel analysis reports. *See* Umatilla LMP at 83; Malheur LMP at 83; Wallowa-Whitman LMP at 83. However, the revised land management plan components still fail to meaningfully address the forests' road systems, fail to even mention the agency's duty to identify the minimum road system on each of the forests, and make misstatements regarding compliance with subpart A.

First and foremost, all three of the land management plans misstate that the travel analysis reports completed by the forests in 2015 identify the minimum road system. *See* Umatilla LMP at 83; Malheur LMP at 83; Wallowa-Whitman LMP at 83 ("This report assesses the current national forest transportation system and identifies the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of the National Forest System lands."). This is incorrect. The travel analysis reports are merely the first step towards compliance with subpart A, identifying recommendations for working towards the minimum road system. Travel analysis reports provide the information necessary for the Forest Service to make that identification in later site-specific projects with decisions subject to public scrutiny under NEPA. The Forest Service correct these misstatements in the final land management plans to clarify the forests have not yet identified the minimum road systems for each forest as required to complete compliance with subpart A.

Contrary to the purpose and intent of subpart A regulations and Forest Service policy, the revised land management plan components fail to meaningfully address the forests' road systems. The plan components lack direction to work towards a minimum road system, consistent with subpart A of the agency's own rules. Instead, throughout the land management plans the Forest Service focuses road-related plan components on *new* road construction. *See, e.g.*, Umatilla LMP at 133 (FLS-9S, "Road maintenance and new road construction shall be designed to minimize adverse effects to the occupied habitat of threatened, endangered, proposed, or candidate plant species."); *id.* (FLS-10G "New road construction should be designed to minimize adverse impacts to the occupied habitat of sensitive plant species to avoid a trend towards federal listing."); *id.* at 152 (RF-13S "Road maintenance and new road construction shall be designed to minimize adverse effects to threatened, endangered, proposed, or candidate aquatic species and their habitat."). *See also* Malheur LMP at 132, 135-136, 153; Wallowa-Whitman LMP at 134, 137-138, 156.

Ultimately the Forest Service's approach and focus on new roads runs contrary to the agency's own rules and policy. The lack of any objectives, standards or guidelines to address the over-sized and under-funded road systems on the three forests is inconsistent with existing conditions on the forest and Desired Condition 2.5 that "[r]oad systems are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal effect on aquatic and terrestrial systems, and are in balance with available funding." Umatilla LMP at 84. The Forest Service must comply with its own regulation and identify the minimum road system. By failing to address this duty in the revised plan components, and instead establishing road management direction that emphasizes construction of new roads, the Forest Service's direction is inconsistent with its own rules.

The revised plan also fails to prioritize unneeded roads for decommissioning. The plans only mention decommissioning roads as part of the climate change tactics to address hydrology, water resources, and infrastructure in the Part 1, vision, section. *See* Umatilla LMP at 22; Malheur LMP at 22; Wallowa-Whitman LMP at 22. The only plan components that actually mention road decommissioning is Objective 1.1 for improving watershed function. Umatilla LMP at 123; Malheur LMP at 125; Wallowa-Whitman LMP at 128. But even that objective hedges against decommissioning by suggesting the Forest Service consider closing or decommissioning roads, and lacks any corresponding numeric goal for decommissioning road miles. *Id.*

With a total of more than 4,500 miles of system roads on the Umatilla National Forest, over 9,600 miles on the Malheur National Forest, and over 9,000 miles on the Wallowa-Whitman National Forest, the lack of any plan components aimed at reducing the size of these road systems is unreasonable. It is also very disheartening, considering the plethora of harmful impacts forest roads cause to water quality, aquatic life including bull trout, wildlife like Rocky Mountain Elk and bighorn sheep, and wildlife habitat. It runs contrary to the Forest Service's own rules under subpart A and Forest Service policy. 36 C.F.R. § 212.5(b); 66 Fed. Reg. 3206 (Jan. 12, 2001) ("The intended effect of this rule is to help ensure that additions to the National Forest System network of roads are those deemed essential for resource management and use; that, construction, reconstruction, and maintenance of roads minimize adverse environmental impacts; and finally that *unneeded roads are decommissioned and restoration of ecological processes are initiated*.") (emphasis added).

Identifying a resilient future road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems, water quality, and wildlife habitat, facilitate adaptation to climate change, ensure reliable recreational access, and operate within budgetary constraints. And it is a win-win-win approach: (1) it's a win for the Forest Service's budget, closing the gap between large maintenance needs and drastically declining funding through congressional appropriations; (2) it's a win for wildlife and natural resources because it reduces negative impacts from the forest road system; and (3) it's a win for the public because removing unneeded roads from the landscape allows the agency to focus its limited resources on the roads we all use, *improving* public access across the forest and helping ensure roads withstand strong storms.

Suggested Remedy: Revise land management plans to delete the claim that the forests' travel analysis reports have already identified the minimum road system for these forests. Revise road-related plan components to work towards a realistic desired road system that is economically and environmentally sustainable and can be managed along with plan components for ecological sustainability.

III. Analysis of the road-related plan components in the FEIS fails to comply with NEPA.

As highlighted throughout this objection letter, the land management plans and analysis in the FEIS is very disorganized and confusing. As just one example, the format and organization of the Umatilla land management plan changes throughout the document. At times, it appears that certain components are missing. *See, e.g.*, Umatilla LMP at 124-126 (appearing to omit Objectives 1.3 and 1.9).

A. Inaccurate Baseline & Lack of Crucial Information

Providing an accurate description of the baseline is essential to allowing for meaningful comparison of alternatives and impacts. *See, e.g.*, *Ctr. for Biological Diversity v. U.S. Dep't of the Interior*, 623 F.3d 633, 642 (9th Cir. 2010) ("A no action alternative in an EIS allows policymakers and the public to compare the environmental consequences of the proposed action."); *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1038 (9th Cir. 2008) (holding a "no-action" alternative invalid under NEPA because it improperly included decisions that had previously been found invalid). Our comments highlighted misrepresentations and inaccuracies of the Forest Service's approach to and the status of the road system on the three forests. (BMBP's Comments on Aquatic Section of Proposed FP Revision DEIS pg. 32).

The failure to disclose and analyze requisite information indicates that the action agency failed to take a "hard look" at the environmental consequences of its actions. *Klamath-Siskiyou Wildlands Ctr. v. Bur. of Land Mgmt.*, 387 F.3d 989 (9th Cir. 2004) (holding that requisite analysis must be in the environmental document). *See also Great Basin Res. Watch v. Bur. of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016) ("Establishing appropriate baseline conditions is critical to any NEPA analysis. Without establishing baseline conditions which exist before a project begins, there is simply no way to determine what effect the project will have on the environment and, consequently, no way to comply with NEPA.") (internal citation omitted). The purpose behind NEPA's hard look requirement is to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b).

The analysis fails to provide an accurate baseline and lacks crucial information, precluding meaningful public comment and the required "hard look" in violation of NEPA. For example, our comments noted that the Forest Service failed to disclose accurate costs of maintaining the forest road system, as well as the backlog of work (referred to as "deferred maintenance") costs. (BMBP's Comments on Aquatic Section of Proposed FP Revision DEIS pg. 34 and 60). In the FEIS, the Forest Service still fails to disclose crucial information, including the costs to maintain the anticipated forest road system on each forest, as well as the existing number of open and closed system road miles on each of the forests and costs to maintain those road systems. Failure to disclose the costs of the road system, while emphasizing new road construction, fails to ensure that any roads constructed through contracts, permits, or leases are designed according to standards appropriate to the planned uses, considering safety, cost of transportation, and effects upon lands and resources. 36 C.F.R. § 219.27(a)(10).

Reliance on an inaccurate baseline allows the Forest Service to ignore current circumstances, historic agency practices, and the latest science, precluding an accurate analysis of alternatives and meaningful comment. At bottom, the analysis fails to consider the latest information regarding the status of roads (i.e., baseline conditions) that is essential to understanding the impacts of the forest road system (see below).

B. Plan Components Inconsistent with Statement of Purpose and Need

The stated purposes and needs for these revised land management plans are to: (1) more adequately protect and restore terrestrial plant and animal species and their habitats; (2) address management of fuels and fire risk; (3) more adequately protect and restore watersheds and aquatic habitats; (4) address climate change; and (5) recognize the interdependency of social and economic components with national forest management. FEIS at 7-9. But the plan components fail to achieve the stated purpose and need for these plan revisions. As just one example, our comments noted that the Forest Service's own analysis recognized the need for limited management activity and low road density to achieve the third purpose and need to protect and restore watersheds and aquatic habitats. Yet as noted throughout this objection, the revised land management plans provide minimal to no measures to make significant improvements in addressing the forest road system or its impacts on watersheds and aquatic habitats. Indeed, the Forest Service eliminates any plan components related to road density standards.

C. Range of Alternatives

The Forest Service's analysis fails to consider a reasonable range of alternatives related to road plan components, and fails to consider important factors that differ among the alternatives considered. We provided specific suggestions to improve the analysis of alternatives. (BMBP's Comments on Aquatic Section of Proposed FP Revision DEIS 33, 60) (e.g., requesting the Forest Service consider how the various alternatives will impact recreation-related jobs as part of the economic and social well-being goal; pointing out the flaw in equating reduced road maintenance with ecological resilience; suggesting the Forest Service consider road maintenance as an objective for protecting aquatic resources). Because public comments heavily focused on road issues, the Forest Service should have considered a range of alternatives for road management.

D. Fails to Consider Impacts

The Forest Service's analysis fails to take the required "hard look" at the direct, indirect, and cumulative impacts of the forest road system. Our comments provided recent scientific information for the agency to consider demonstrating the forests' forest road systems are economically and environmentally unsustainable, and highlighted the harmful impacts of forest roads to, *e.g.*, water quality, erosion and sedimentation, wildlife, aquatic species, connected wildlife habitats, and safe public access. (BMBP's Comments on Aquatic Section of Proposed FP Revision DEIS pgs. 7, 11, 13-16, 25-27, 29, 31-36, 44, 52). We urged the Forest Service to consider and disclose the significant impacts associated with the forests' road systems. But it fails to do so in this FEIS.

In its analysis of the estimated effects of alternatives, the Forest Service must address not only direct, indirect, and cumulative impacts (as required by NEPA regulations 40 C.F.R. § 1502.14 and 1502.16), but also: (1) expected outputs for planning periods; (2) relations of expected outputs to the RPA Program objectives; (3) direct and indirect benefits and costs; and (4) significant resource tradeoffs and opportunity costs associated with achieving alternative resource objectives. 36 C.F.R. § 219.12(g). Analysis of the direct and indirect benefits and costs must be in sufficient detail to estimate: (i) expected real-dollar costs, including investment, administrative, and operating costs required to manage the forest up to the point where the outputs are valued and the environmental consequences are realized; (ii) expected real-dollar value of all outputs attributable to each alternative; (iii) economic effects of alternatives; and (iv) monetary opportunity costs. *Id.* The Forest Service fails to comply with these 1982 planning regulations or the NEPA regulations by failing to disclose direct, indirect, and cumulative impacts of the road systems on the three forests.

As noted throughout this objection, the Forest Service fails to disclose, consider, or address in the revised land management plans the direct and indirect benefits and costs of the forests' road systems. It fails to assess or disclose the significant resource tradeoffs and opportunity costs associated with achieving alternative resource objectives. The Forest Service also fails to consider how its proposed road management approach will affect plant and animal diversity on the forests. 36 C.F.R. § 219.26 ("For each planning alternative, the interdisciplinary team shall consider how diversity will be affected by various mixes of resource outputs and uses, including proposed management practices."). In particular, the analysis ignores and downplays many of the direct, indirect, and cumulative impacts that will result from the omission of any road density standards in these land management plans. The Forest Service fails to consider cumulative impacts of the road system when combined with effects from climate change. And the Forest Service fails to evaluate many impacts of the road system under the different alternatives, as required by 36 C.F.R. § 219.12(h).

E. Decision Unsupported by Analysis

The Forest Service must articulate "a rational connection between the facts found and the conclusions made." *Or. Natural Res. Council v. Lowe*, 109 F.3d 521, 526 (9th Cir. 1997). It fails to do so here for many of its management decisions regarding roads. Numerous revised plan components weaken protections from the 1990 forest plans. As just one example, the Forest Service seeks to remove road density standards, despite best available science showing road density is a reliable and crucial measure for preventing harmful impacts to wildlife, wildlife habitat, aquatic life, and water quality. Given that existing road densities in each of the forests is already much greater than what is tolerable for ecological health, the Forest Service's decision is unsupported by its own analysis and unreasonable.

Suggested Remedy: Revise the analysis in the FEIS to accurately disclose the current road system baseline, include an accurate and complete inventory of roads, and disclose the current costs and anticipated costs of maintaining the future road system to allow for meaningful analysis and comparison of alternatives under NEPA. Revise the analysis in the FEIS to a "hard look" at the direct, indirect, and cumulative impacts from forest roads, including climate change stressors and forest roads, and to consider a reasonable range of alternatives related to road management. Revise the plan components and draft ROD to show a rational connection between the facts found and the conclusions made.

IV. The Forest Service fails to ensure the road-related plan components comply with the Endangered Species Act.

Section 7 of the Endangered Species Act (ESA) imposes a substantive obligation on federal agencies to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of" habitat that has been designated as critical for the species. 16 U.S.C. § 1536(a)(2); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 924 (9th Cir. 2008).

Here, the U.S. Fish and Wildlife Service (FWS) prepared a May 29, 2018 Biological Opinion assessing the impacts of the revised land management plans on threatened bull trout and its critical habitat, and threatened Spalding's catchfly. FWS also informally consulted regarding the impacts of the revised land management plans on endangered gray wolf and conferenced regarding impacts to wolverine (proposed for listing). FWS agreed with the Forest Service that the land management plans are framework programmatic actions, and therefore did not provide an incidental take statement. FWS concluded the revised land management plans will not jeopardize the continued existence of bull trout, and will not result in the destruction or adverse modification of bull trout critical habitat. May 29 2018 Biological Opinion at 151-153. FWS concluded the revised land management plans are not likely to jeopardize the continued existence of Spalding's catchfly. May 29 2018 Biological Opinion at 167. FWS determined the land management plans may affect, but are not likely to adversely affect the gray wolf. May 29 2018 Biological Opinion at 9. And FWS concluded the revised land management plans are not likely to jeopardize the continued existence of the wolverine. May 29 2018 Biological Opinion at 188.

The National Marine Fisheries Service (NMFS) prepared an April 20, 2018 Biological Opinion assessing the impacts of the revised land management plans on Snake River Basin steelhead, Middle Columbia River steelhead, Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and designated critical habitat. NMFS determined the revised land management plans are not likely to jeopardize the continued existence of Snake River Basin steelhead, Middle Columbia River steelhead, Snake River spring/summer Chinook salmon or adversely modify the species' designated critical habitat. It also determined the revised land management plans are not likely to adversely affect Snake River fall Chinook salmon, Snake River sockeye salmon, or these species' designated critical habitat.

We were unable to comment earlier on the veracity of the FWS's analysis in the May 29 2018 Biological Opinion or NMFS's analysis in the April 20 2018 Biological Opinion because these documents were not available during the public notice and comment period. Best available science demonstrates that forest roads negatively impact wildlife and aquatic life, including bull trout, Snake River Basin steelhead, Middle Columbia River steelhead, Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, Snake River sockeye salmon, and these species' designated critical habitat, in numerous ways. Given the deficiencies in the road-related land management plan components identified above, the Forest Service fails to ensure the activities authorized under its revised land management plans – including the road-related plan components that authorize the construction of new system roads and temporary roads within riparian management areas and do not set any road density standards or guidelines – will not harm listed wildlife or degrade its critical habitat.

FWS's May 29 2018 Biological Opinion and NMFS's April 20 2018 Biological Opinion are flawed because they (1) rely on an inaccurate baseline; (2) mischaracterize or ignore best available science; (3) rely on flawed assumptions; (4) fail to consider analyze or explain key aspects of the agency's analysis; and (5) improperly eliminate road density standards previously determined to be necessary to protect wildlife and wildlife habitat. The Forest Service has an independent legal duty to ensure the revised land management plans comply with the ESA. Its reliance on the flawed FWS Biological Opinion, flawed NMFS Biological Opinion, and concurrence determinations is unreasonable.

<u>Suggested Remedy</u>: Refrain from any final decision related to the revised land management plans unless and until the flaws related to Section 7 consultation identified above have been addressed in revised Biological Opinions.

V. The Forest Service fails to ensure the road-related plan components comply with the Clean Water Act.

The Clean Water Act (CWA) establishes a comprehensive program "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" by reducing and eventually eliminating the discharge of pollutants into those waters. 33 U.S.C. § 1251(a). The CWA program includes a regulatory scheme of permits, technology controls, and water quality-based pollution controls. States are responsible for developing water quality standards to protect the desired conditions of each waterway within a state's regulatory jurisdiction. 33 U.S.C. § 1313(c). A water quality standard includes three elements: (1) one or more designated uses, such as fish propagation; (2) numeric and narrative criteria specifying the water quality condition necessary to protect the designated uses; and (3) an antidegradation policy that ensures that uses are protected and that high quality waters will be maintained and protected. 33 U.S.C. §§ 1313(c)(2), 1313(d)(4)(B); 40 C.F.R. §§ 131.6, 131.10-12. Waters that do not meet water quality standards are deemed "water quality-limited" and placed on the CWA's § 303(d) list. States must develop total maximum daily loads ("TMDLs") for all § 303(d)-listed waterbodies to bring them back into compliance with applicable water quality standards.

All federal agencies must comply with state water quality standards, including a state's antidegradation policy. 33 U.S.C. § 1323(a), *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146 (9th Cir. 1998). Here the Forest Service fails to ensure that the land management plans will comply with the CWA by not causing or contributing to a violation of Oregon's water quality standards.

Our comments highlighted how roads are the primary cause of water quality degradation on the national forests in the Blue Mountains (BMBP's Comments on Aquatic Section of Proposed FP Revision DEIS pgs. 35, 37, 44). Yet the road-related standards and guidelines in these land management plans create exceptions and allowances for road building activities that will cause or contribute to a violation of water quality standards. For example, RF-1G allows new roads and trails to be constructed within riparian management areas if no other feasible alternative exists.

See, e.g., Umatilla LMP at 150. This guideline does not explain what the Forest Service would have to show to demonstrate that no other feasible alternative exists. As a guideline instead of a standard it also fails to hold the Forest Service to any required action in a site-specific project. And ultimately this guideline improperly prioritizes timber interests and motorized use above improving and maintaining watershed conditions. Similarly, RF-2G allows temporary roads, including stream crossings, in riparian management areas. *See, e.g.*, Umatilla LMP at 150. Here the land management plans do not even require the Forest Service to consider whether other feasible alternatives exist. In light of the best available science showing forest roads – both system and temporary roads - are the primary cause of water quality degradation on the three forests, the Forest Service's approach under these guidelines is inconsistent with the science and fails to ensure water quality will be maintained.

Other examples include RF-3S, which directs the Forest Service to avoid side-casting in riparian management areas. *See, e.g.*, Umatilla LMP at 150. Side-casting in these areas should be prohibited to ensure protection of water quality and compliance with the Clean Water Act. Standard RF-5S directs the Forest Service to avoid disruption of natural hydrologic flow paths when constructing or reconstructing roads or landings inside of or outside of riparian management areas. Umatilla LMP at 151. Standard RF-8S states that "[w]here physically feasible, construction or reconstruction of stream crossings will avoid diversion of streamflow out of the channel and down the road in the event of a crossing failure." Umatilla LMP at 151. Guideline RF-6G instructs the Forest Service to avoid wetlands when reconstructing existing roads or constructing new roads, but also allows the agency to simply minimize impacts when avoidance is "not practical." Umatilla LMP at 151. These standards and guidelines are insufficient to ensure land management activities on the three forests will not cause or contribute to violations of water quality.

<u>Suggested Remedy</u>: Revise the road-related plan components in the revised land management plans to ensure the road-related plan components comply with the Clean Water Act.

MOTORIZED RECREATION SECTION

I. The motorized recreation plan components fail to comply with NFMA or the 1982 planning regulations.

The Forest Service notes that since the late 1980s and early 1990s, off-highway vehicle (OHV) of national forests has increased and with advancing technologies, OHVs are able to ride further into previously inaccessible and remote areas. *See* Umatilla LMP at 170; Malheur LMP at 171; Wallowa-Whitman LMP at 174. The Forest Service has duties under the Travel Management Rule and Executive Orders 11644 and 11989 to consider and locate motorized designations with the objective minimizing impacts to forest resources, disruption of wildlife habitat and harassment of wildlife, and conflicts among uses. By failing to provide meaningful direction for managing motorized recreation, the revised plan components fail to comply with the 1982 planning regulations.

A. Resource Protection

The 1982 planning regulations contain numerous management prescriptions requiring forest plans to provide for resource protection. 36 C.F.R. § 219.27. The road-related plan components in the Umatilla, Malheur, and Wallowa-Whitman revised land management plans fail to provide those resource protections in violation of the regulations.

For example, land management plans lack any motorized recreation plan components related to the 1982 planning regulations requirement that forest plans conserve water resources and protect streams, streambanks, shorelines, lakes, wetlands, and other bodies of water. 36 C.F.R. §§ 219.27(a)(1), 219.27(a)(4). The land management plans also lack any motorized recreation plan components to prevent the destruction or adverse modification of critical habitat for threatened and endangered species as required by the 1982 planning regulations. 36 C.F.R. § 219.27(a)(8). Indeed, it is unclear from the analysis and lack of explanation for determining suitability and ROS settings (see below) whether the Forest Service even considered the existing overlap of off-highway vehicle use and designated critical habitat, much less made suitability determinations or designated ROS settings so as to prevent motorized recreation impacts to that habitat in the future.

As another example, the land management plans lack any motorized recreation plan components to provide for and maintain diversity of plant and animal communities to meet overall multiple-use objectives, or provide for adequate fish and wildlife habitat to maintain viable populations of existing native vertebrate species and wildlife species as required by the 1982 planning regulations. 36 C.F.R. § 219.27(a)(5), (6). In particular, the standards and guidelines for Rocky Mountain Elk are insufficient to protect these species from the adverse impacts of motorized recreation. *See* Umatilla LMP at 137 (RME-1S: "There shall be no net loss of elk security measured within watersheds (5th-field HUC) through building of new motorized routes or reopening of closed motorized routes for public travel."); Malheur LMP at 139 (similar); Wallowa-Whitman LMP at 141 (similar).

By setting a "no net loss" standard when building new motorized routes in elk security habitat, the Forest Service simply maintains status quo without assessing whether current elk security habitat is sufficient for sustaining elk populations on the national forests. Best available science shows that elk respond negatively to motorized recreation. A "no net loss" approach also ignores the cumulative impacts of cutting multiple motorized routes through elk security habitat. Even if previous routes are no longer open to motorized use, the old routes will continue to act as a vector for spreading invasive weeds and cause other impacts that fragment elk security habitat. In the cumulative, this approach will not provide for adequate wildlife habitat to maintain viable populations of Rocky Mountain elk.

B. Inadequate Objectives

The rules define "objective" as a "concise, time-specific statement of measurable planned results that respond to pre-established goals" and "forms the basis for further planning to define precise steps to be taken and the resources to be used in achieving identified goals." 36 C.F.R. § 219.3. Objectives set forth in the revised land management plans are inadequate because, *inter alia*, they lack time-specific parameters, fail to achieve or even work towards desired conditions, or are completely missing. As one glaring example, despite the fact that the Malheur and Wallowa-Whitman National Forests have yet to comply with the 2005 Travel Management Rule, and a statement in the analysis that these "forests will commence with their subpart B travel management planning" once the revised forest plans are in place, FEIS at 16, neither of these forests' land management plans include concise, time-specific objectives related to this goal (which is also in the desired condition 2.5 for Roads and Trails).

C. Inadequate Standards and Guidelines

The 1982 planning regulations require the establishment of qualitative and quantitative standards and guidelines to attain a plan's stated goals and objectives. 36 C.F.R. § 219.1 to 219.3. As noted elsewhere, because guidelines have not been interpreted as mandatory, standards are the only planning component that can adequately insure the protection mandated in NFMA.

The land management plans lack any objectives, or standards and guidelines to work towards desired condition 2.5 (Roads and Trails Access) to identify a system of roads, trails, and areas for nonmotorized and motor vehicle use. Umatilla LMP at 84; Malheur LMP at 84; Wallowa-Whitman LMP at 84 (directing that "[m]otor vehicle use occurs on roads, trails, and areas open to motor vehicle use in compliance with Travel Management Rule (36 CFR 212).").

Desired condition 2.5 also states:

> Trails for motor vehicle use provide a variety of recreational experiences, including various difficulty levels and trail lengths, access to scenic areas, and routes through assorted ecosystems while minimizing impacts to natural resources and user conflicts. Loop trails and trailhead developments meet the needs of increased recreation use. Snowmobile use is managed to provide varying challenges and distances while respecting ecological systems and other uses.

Id. This emphasis on providing motorized vehicle trails for a variety of experiences, while omitting any concerns about minimizing impacts to wildlife, wildlife habitat, or aquatic species despite best available science and historic practices showing the harmful impacts of OHV use is unreasonable. This is especially true for the Malheur and Wallowa-Whitman National Forests, which have yet to complete travel management plans closing cross-country motorized travel.

For the Umatilla National Forest, RT-1G directs the Forest Service to "[l]imit motorized vehicles to roads, trails, and areas that are designated for use in the Umatilla National Forest Motorized Access and Travel Management Plan." Umatilla LMP at 138. Given that Forest Service regulations require motorized use be consistent with a forest's Travel Management Plan, this guideline should be a standard.

The guideline for protecting Rocky Mountain Elk and other resources from motorized recreation during certain seasons is also inadequate. Guideline RME-2G sets seasonal closures for motorized travel on system roads, trails and areas. Umatilla LMP at 137; Malheur LMP at 139; Wallowa-Whitman LMP at 141. First, the seasonal dates are insufficient to protect Rocky Mountain Elk based on elk calving and rutting seasons, when elk are most vulnerable. Second, these suggested seasonal closure dates are inadequate to protect elk because they are written as a guideline instead of a standard and they provide for exceptions creating a major loophole. RME-3G is likewise insufficient. Umatilla LMP at 137; Malheur LMP at 139; Wallowa-Whitman LMP at 141.

D. Suitability

Forest Plans "guide all natural resource management activities and establish management standards and guidelines for the National Forest System," including determining "the availability and suitability of lands for resource management." 36 C.F.R. § 219.1(b). Suitability is defined as "[t]he appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses forgone." *Id.* § 219.3. Forest plans must identify "[t]he physical and biological characteristics that make land suitable for recreation opportunities." *Id.* § 219.21(a)(1).

Contrary to the 1982 planning rules, the Forest Service fails to identify the suitability of various areas on the three forests for motorized or non-motorized use based on the physical and biological characteristics that make land suitable for recreation opportunities. The Forest Service's analysis refers generally to suitability determinations for road access tailored to each management area. FEIS at 51. However, the only location listing road access suitability determinations anywhere in the agency's analysis or the land management plans themselves is Table 31 in the land management plans. Umatilla LMP at 122; Malheur LMP at 124; Wallowa-Whitman LMP at 127 (Table 29). The Forest Service fails to provide a map showing the suitability determinations for various areas of the forest, or explain how it made these suitability determinations. The agency goes on to rely on the suitability determinations (that are never disclosed) as providing protection through acreages determined not suitable for uses (roads, grazing, timber production) that present potential risk to aquatic and riparian habitats and aquatic species. FEIS at 62.

As a result, the proposed suitability determinations do not reflect the physical and biological characteristics that make land suitable for recreation opportunities. Instead, the Forest Service's approach assumes the current levels and locations of motorized recreational use are appropriate without considering the impacts to the physical and biological characteristics of the land. We are especially concerned about proper suitability determinations because suitability is very likely to influence the summer travel management planning that has yet to occur on the Malheur and Wallowa-Whitman National Forests, and winter travel planning that must occur on all three forests (explained below).

E. ROS Settings

The 1982 planning rules require land management plans to identify the recreational preferences of user groups and the settings needed to provide quality recreation opportunities, and recreation opportunities on the National Forest System lands. 36 C.F.R. § 219.21(a)(2), (3). The Forest Service's land management plans fail to provide the ROS settings necessary to provide quality recreation opportunities, and recreation opportunities on the National Forest System lands.

The Forest Service states that in response to comments on the draft revised land management plans and DEIS, an additional forestwide guideline was developed to provide additional management direction for recreation-related projects to maintain consistency with mapped classes and setting descriptions in the ROS. FEIS at 421. Guideline REC-1G states, "Recreation-related project-level decisions and implementation activities should be consistent with mapped classes and setting descriptions in the recreation opportunity spectrum." Umatilla LMP at 137; Malheur LMP at 138; Wallowa-Whitman LMP at 140. This guideline should be a standard. Otherwise, the land management plans lack any standards to ensure application of or compliance with ROS settings.

The Forest Service states that its recreation opportunity spectrum inventory identified five physical and social settings on the three forests: primitive, semi-primitive nonmotorized, semi-primitive motorized, roaded natural, rural, and urban. Umatilla LMP at 168 (Table 50). It does not explain in the FEIS analysis or in the land management plans *how* it identified those settings, and it fails to provide a map illustrating where those settings occur across the forest. *See, e.g.*, FEIS at 422 (noting that "[c]orresponding recreation opportunity spectrum classes appropriate to each management area are described in management area descriptions and desired conditions and establish expectations for recreation setting characteristics" without explaining how it determined each ROS class was appropriate). This lack of information precludes meaningful public comment in violation of NEPA, and fails to demonstrate compliance with the 1982 planning regulations.

The Forest Service's planning directives (Forest Service Manual and Handbook) require it to develop plan components necessary to close the gap between existing and desired ROS settings in a specific amount of time. But here it appears the Forest Service relied on existing conditions to establish its ROS settings, rather than describing *desired* ROS settings based on legal and practical suitability of the desired conditions for those lands. The revised land management plans ignore any need to close the gap between existing and desired ROS. This approach fails to comply with the agency's own planning directives. By simply continuing the status quo the

Forest Service fails to develop a coherent system of sustainable and socially compatible recreation opportunities, as required by the planning directives.

Other than the guideline noted above, the only plan components referring to ROS settings are the desired conditions for specific management areas. *See, e.g.*, Umatilla LMP at 108; Malheur LMP at 110; Wallowa-Whitman LMP at 110 (desired condition for MA 1A (Wilderness) stating that the recreation opportunity spectrum is primitive). And the Forest Service completely fails to identify ROS settings for some management areas. *See, e.g.*, Umatilla LMP at 111 (stating that for MA 2B Research Natural Areas, the desired condition states the recreation opportunity spectrum "depends on the surrounding management areas.").

F. Monitoring

The 1982 planning regulations require monitoring and evaluation "to determine how well objectives have been met and how closely management standards and guidelines have been applied." 36 C.F.R. § 219.12(k). Monitoring requirements must provide for a quantitative estimate of performance; documentation of measured prescriptions and effects, including significant changes in productivity of the land; and documentation of costs associated with carrying out the planned management prescriptions as compared with the costs estimated in the land management plans. *Id.* § 219.12(k)(1)-(3). We urge the Forest Service to improve the monitoring plan components for access management. The Forest Service's monitoring parameters for motorized recreation fail to comply with the 1982 planning regulation's requirements.

According to Forest Service directives, the objective of a plan monitoring program is to, *inter alia*, enable the responsible official to determine if a change in plan components or other plan content applicable to the plan area may be needed, and to inform the management of resources on the plan area, through means such as testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving the plan's desired conditions or objectives. FSH 1909.12, ch. 30.2.

The Forest Service's monitoring parameters for motorized recreation fail to comply with these requirements. This is unsurprising, given the lack of plan components that address motorized recreation (see above). For example, the monitoring question asking whether watershed and aquatics standards and guidelines and best management practices are being implemented at project sites (e.g., range, roads, recreation, and vegetation management). Umatilla LMP at 157; Malheur LMP at 159; Wallowa-Whitman LMP at 161. This monitoring parameter does not provide for a quantitative estimate of performance. And because it is predicated on inadequate plan components, it is insufficient to determine how well objectives have been met and how closely management standards and guidelines have been applied.

<u>Suggested Remedy</u>: Revise the motorized recreation plan components to include standards or guidelines to comply with the 1982 planning regulations. Reconsider ROS settings and the analysis in the FEIS to disclose existing ROS settings, identify desired ROS settings based on suitability determinations (instead of existing conditions), and revise sustainable recreation plan components to close the gap between existing and desired ROS settings in a specific amount of

time. Include a clear commitment to site-specific summer and winter travel planning within the areas deemed suitable for motorized use, within a specific time frame. We suggest the Malheur and Wallowa-Whitman National Forests commit to site-specific summer travel management planning within one year of completing these forest plan revisions. And we suggest the Umatilla, Malheur, and Wallowa-Whitman National Forests commit to site-specific winter travel planning within three years of completing these forest plan revisions. Revise the motorized recreation monitoring plan questions and indicators to track whether recreational uses on the forest are sustainable, and require annual reporting of enforcement and compliance issues.

II. The motorized recreation plan components in the Malheur and Wallowa-Whitman land management plans fail to ensure compliance with subpart B of the Travel Management Rule.

Uncontrolled motorized use across the Malheur and Wallowa-Whitman National Forests has resulted in significant environmental damage to the landscape. Unmanaged recreational motor vehicle use upsets the natural balance of the forest. It damages the soil and water resources, degrades fish habitat, and harms wildlife. It also intrudes on the freedom of quiet solace many non-motorized users seek on these public lands. Here the Forest Service is missing a major opportunity to restore a balance to the forest and commit to complying with subpart B of the 2005 Travel Management Rule. 36 C.F.R. §§ 212.50-212.57 (Subpart B—Designation of Roads, Trails and Areas for Motor Vehicle Use) (commonly referred to as the 2005 Travel Management Rule).

Our comments highlighted the Forest Service's duties under the Travel Management Rule and Executive Orders to consider and minimize effects from motorized routes and areas on forest resources, wildlife, and conflicts with other uses. (BMBP's Comments on Aquatics Section of Proposed FP Revision DEIS pg. 38). The Umatilla National Forest completed its Travel Management Plan as required by the 2005 Travel Management Rule, but the Malheur and Wallow-Whitman National Forests have not. FEIS at 16. The Forest Service fails to include any plan components to ensure the Malheur and Wallowa-Whitman National Forests will come into compliance with the 2005 Travel Management Rule. After more than 10 years of ignoring this legal duty, omitting an objective, standard or guideline related to this legal duty is unreasonable, arbitrary and capricious.

<u>Suggested Remedy</u>: Given the unreasonable delay in working towards its duty to close cross-country travel and designate motorized use consistent with the 2005 Travel Management Rule, the Forest Service must revise the land management plans for the Malheur and Wallowa-Whitman National Forests to include a time-specific objective to initiate summer travel management planning within one year of completing these forest plan revisions.

III. The motorized recreation plan components are inconsistent with the agency's own rules under Subpart C of the Travel Management Rule.

Courts have made clear there is no basis for excluding over-snow vehicles (OSVs) from travel management decisions. *See, e.g.*, *Winter Wildlands Alliance v. U.S. Forest Serv.*, No. 1:11-CV-586-REB, 2013 U.S. Dist. LEXIS 47728 (D. Idaho Mar. 29, 2013) (explaining "there is no authority for the Forest Service to delay the making of such designations for OSVs, under the guise of 'preserving the authority' to do so at some future date."). We urge the Forest Service to demonstrate application of the minimization criteria when designating management areas and making suitability classifications for winter motor vehicle use in forest planning. Yet here the Forest Service makes no mention of completing winter travel planning required by subpart C. By excluding winter travel management planning from the land management plans, the Forest Service continues to allow the unlawful winter management approach of "open unless designated closed," contrary to its own rules.

The land management plans contain plan components directing management of winter motorized use, but fail to ensure compliance with the 2015 OSV rule or minimization criteria. *See, e.g.*, Umatilla LMP at 84 (stating in Desired Condition 2.5 that "Snowmobile use is managed to provide varying challenges and distances while respecting ecological systems and other users.").

<u>Suggested Remedy</u>: Revise the land management plans for all three forests to include a time-specific objective to initiate winter travel management planning within three years of completing these forest plan revisions.

IV. The Forest Service's analysis of the motorized recreation plan components in the FEIS fails to comply with NEPA.

A. Inaccurate Baseline

The Forest Service must accurately inform the public about applicable rules, regulations and policies impacting its action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. 40 C.F.R. § 1500.1(c). NEPA directs the Forest Service must "to the fullest extent possible . . . [e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment." 40 C.F.R. § 1500.2(d). Here, the Forest Service paints an inaccurate picture of the regulatory framework within which the agency must act.

Related, providing an accurate description of the baseline is essential to allowing for meaningful comparison of alternatives and impacts. *See, e.g.*, *Ctr. for Biological Diversity v. U.S. Dep't of the Interior*, 623 F.3d 633, 642 (9th Cir. 2010) ("A no action alternative in an EIS allows policymakers and the public to compare the environmental consequences of the proposed action."); *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1038 (9th Cir. 2008) (holding a "no-action" alternative invalid under NEPA because it improperly included decisions that had previously been found invalid).

Here, the Forest Service fails to provide an accurate baseline of motorized recreation on the three forests. As just one example, the analysis fails to disclose that none of the forests have complied with the 2015 OSV rule requiring forests to designate roads, areas and trails for winter motorized use consistent with the minimization criteria, and prohibit winter motorized travel outside of those areas. *See* FEIS at 16 (noting the 2013 court order to amend the previous travel management rule making winter designations discretionary, but lacking any information about the 2015 final rule or that the three forests are not in compliance); 19-20 (explaining the status of summer travel management plans, but omitting any information about winter travel management plans); 72.

B. Failure to Accurately Disclose Essential Information

The failure to disclose and analyze requisite information indicates that the action agency failed to take a "hard look" at the environmental consequences of its actions. *Klamath-Siskiyou Wildlands Ctr. v. Bur. of Land Mgmt.*, 387 F.3d 989 (9th Cir. 2004) (holding that requisite analysis must be in the environmental document). *See also Great Basin Res. Watch v. Bur. of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016) ("Establishing appropriate baseline conditions is critical to any NEPA analysis. Without establishing baseline conditions which exist before a project begins, there is simply no way to determine what effect the project will have on the environment and, consequently, no way to comply with NEPA.") (internal citation omitted). The purpose behind NEPA's hard look requirement is to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b).

The Forest Service fails to accurately disclose the nature of its proposed actions related to motorized recreation, precluding meaningful public comment in violation of NEPA. This is closely related to the failure to establish an accurate baseline. In addition to failing to disclose the current status of summer and winter motorized travel management (or lack thereof) on the three forests, the Forest Service fails to disclose or otherwise explain how it made its suitability determinations (see above), fails to provide a map of those suitability determinations, and fails to disclose how it determined the ROS settings.

C. Plan Components Inconsistent with Statement of Purpose and Need

The stated purposes and needs for these revised land management plans are to: (1) more adequately protect and restore terrestrial plant and animal species and their habitats; (2) address management of fuels and fire risk; (3) more adequately protect and restore watersheds and aquatic habitats; (4) address climate change; and (5) recognize the interdependency of social and economic components with national forest management. FEIS at 7-9. But the motorized recreation plan components fail to achieve the stated purpose and need for these plan revisions. For example, the motorized recreation plan components simply continue the status quo of recreation management on the forests, and in no way provide for or work towards addressing the documented negative impacts of motorized recreation – especially cross-country motorized travel – on terrestrial plant and animal species and their habitats, or watersheds and aquatic habitats.

D. Fails to Consider Impacts and Best Available Science

The Forest Service's analysis fails to take the required "hard look" at the direct, indirect, and cumulative impacts of summer and winter motorized recreation on the forests. "In formulation and analysis of alternatives . . . interactions among recreation opportunities and other multiple uses shall be examined," including consideration of "the impacts of the proposed recreation activities on other uses and values and the impacts of other uses and activities associated with them on recreation opportunities, activities, and quality of experience." 36 C.F.R. § 219.21(d).

Winter motor vehicle use has numerous harmful impacts on the environment, and the Forest Service needs to take a hard look at those impacts. *See also* Switalski, Snowmobile Best Management Practices for Forest Service Travel Planning: A Comprehensive Literature Review and Recommendations for Management, 12 Journal of Conservation Planning 13 (2016) (Attachment A). The Forest Service's analysis fails to acknowledge or disclose all of these direct, indirect, and cumulative impacts.

E. Decision Unsupported by Analysis

The Forest Service must articulate "a rational connection between the facts found and the conclusions made." *Or. Natural Res. Council v. Lowe*, 109 F.3d 521, 526 (9th Cir. 1997). But here it fails to explain its largely non-existent approach to managing winter and summer motorized use on the forests in light of the agency's own analysis and best available science showing motorized recreation has very real, harmful impacts on forest resources, wildlife and wildlife habitat, and non-motorized uses.

Indeed, the Forest Service states that the "management area allocations provide opportunity for increased motorized vehicle use, compared to the preferred Alternative E within the 2014 draft Forest Plan for the three National Forests" resulting "from changes to Management Areas 1B, 3A, 3B, and 4A." FEIS at 73. These changes move the forests towards allowing *more* motorized use, despite best available science and data from these forests showing motorized vehicle use causes very real, harmful impacts to water quality, soils, wildlife, wildlife habitat, aquatic species, and non-motorized uses. The agency's change in approach is unsupported by its own analysis, and is arbitrary and capricious.

F. Significant New Information

There is a wealth of significant new information since the Forest Service completed its analysis of the land management plans that requires the agency to prepare a supplemental analysis. Given the land management plans and the analysis of impacts is almost five years old, the agency's analysis does not account for new scientific information on sensitive wildlife and other forest resources and how they are affected by ORV use. It does not account for current recreational use trends and increasing conflict between motorized and non-motorized users. It does not account for the current and predicted impacts of climate change in the context of impacts from winter motorized use, which is, among other things, reducing and altering snowpack and increasing the vulnerability of wildlife and other resources to impacts from winter motorized use. *See, e.g.*, Attachment A.

Laws have changed. The last notice and comment period ended in 2014, before the Forest Service finalized its 2015 OSV rule requiring the Forest Service to designate routes, areas and trails for winter motorized use. And the existing summer travel management decisions on the Umatilla likely do not account for the increased speed, power, and other capabilities of current off-road vehicle use technology (summer and winter), which allows ORVs to travel further and faster into the backcountry and to access remote areas that were previously inaccessible.

Suggested Remedy: Revise the analysis in the FEIS to accurately disclose the current status of winter and summer travel planning on each of the forests, and include information necessary to understanding how the Forest Service made its suitability determinations and ROS settings. Revise the analysis in the FEIS to a "hard look" at the direct, indirect, and cumulative impacts from motorized recreation. Revise the plan components and draft ROD to show a rational connection between the facts found and the conclusions made. In light of the new information since the last public notice and comment period (including changes in the agency's own rules, and new understandings of best available science showing the impacts of winter motorized use), the Forest Service needs to revise its plan components related to winter motorized travel management and prepare a supplemental EIS. Prepare a supplemental analysis to account for the significant new information since 2014.

V. The Forest Service fails to ensure the motorized recreation plan components comply with the Endangered Species Act.

As explained in the section on road management, the Forest Service has a substantive obligation on federal agencies to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of" habitat that has been designated as critical for the species. 16 U.S.C. § 1536(a)(2); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 924 (9th Cir. 2008). FWS's May 29 2018 Biological Opinion and NMFS's April 20 2018 Biological Opinion are also flawed because they (1) fail to acknowledge the lack of compliance by these forests with the 2005 summer Travel Management Rule and 2015 OSV rule, (2) ignore best available science, including the impacts of summer and winter motorized recreation on listed species and designated critical habitat; (3) rely on flawed assumptions, including that the forest plans ensure that the forests will "maintain a system of roads, trails, and areas for non-motorized and motor vehicle use available for public use" (*see* NMFS's April 20 2018 Biological Opinion at 6); and (4) fail to consider, analyze or explain key aspects of the agency's analysis.

Suggested Remedy: Refrain from any final decision related to the revised land management plans unless and until the flaws related to Section 7 consultation identified above have been addressed in revised Biological Opinions.

VI. The Forest Service fails to ensure the motorized recreation plan components comply with the Clean Water Act.

As noted in the section on road plan components, all federal agencies must comply with state water quality standards, including a state's antidegradation policy. 33 U.S.C. § 1323(a), *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146 (9th Cir. 1998). Here the Forest Service fails to ensure that the land management plans will comply with the CWA by not causing or contributing to a violation of Oregon's water quality standards. While the road-related plan components are insufficient to ensure no violations of water quality standards from road management authorized by the forest plans, any motorized recreation plan components to address the impacts of motorized recreation on water quality are non-existent.

Suggested Remedy: Revise the land management plans to include motorized recreation plan components that ensure the summer and winter motorized use on the forests will not cause or contribute to a violation of water quality standards.

WILDERNESS AND ROADLESS SECTION

I. Blue Mountains Region Potential Wilderness and Existent Roadless Areas: The Imperative Importance of All Rare Remaining Wilderness Quality Unroaded Areas

In comments on the DEIS, Objectors strongly advocated increasing recommended potential wilderness to include all existing roadless areas and other applicable locations with wilderness quality lands. Our organizations selected a representative example from each national Forest in the Blue Mountains region (addressed specifically later in this objection). In our previous DEIS comments we presented a detailed critique of the Forest Service's potential wilderness evaluation process, with recommendations to improve upon the EIS analysis concerning wilderness quality lands. Ecological science, including the science regarding ongoing climate change, emphasizes the need to protect unroaded areas to maintain and recover their wilderness characteristics pending eventual legislation and designation, and to provide for existing uses where compatible with protecting wilderness character.

Ecologists (Noss et al. 1995; Noss and Peters 1995) have determined that old growth ponderosa pine forests constitute one of America's most endangered ecosystems. They report that old-growth ponderosa pine has suffered an estimated 85-98% area loss due to destruction, conversion to other uses, and significant degradation in structure, function, and composition. While faring better than most forested areas, the Blue Mountains region has suffered loss of much of its original old growth ponderosa pine. Logging, which continues to this day, is one of the principal causes of this decline.

With its emphasis on protecting and restoring all natural processes, wilderness designation provides the highest level of protection for the full range of native species (Hendee and Mattson 2002). Although administratively designated roadless areas (e.g., wildlife habitat areas and inventoried roadless areas) provide some ecological protection of wildlife habitat, the agency historically has sacrificed roadless areas and wildlife protection in favor of resource extraction and motorized recreation (Forest Service 2000; Crist and Wilmer 2005, Crist and Wilmer 2002; Concerned Scientists 2004; DellaSala and Frost 2001; DeVelice and Martin; Heilman et al. 2002; Loucks et al. 2003; Noss and Cooperidder 1994; Noon et al. 2003; Strittholt and DellaSalla 2001). The passage of the 1964 Wilderness Act was Congress's response to federal land management agencies' failure to protect these values (Frome 1997). The proposed wilderness additions we and other conservation organizations have emphasized in our previous comments would protect critical wildlife linkages and important core refugia essential to "afford perpetual protection to the native fauna and flora" (U.S. Congress 1905).

Several additional studies have shown the importance and value people place on these passive use benefits of wilderness (Cordell et al 2014, Cordell et al. 1999). These values or needs are reflected in the National Survey on Recreation and the Environment finding that roughly 70 percent of those surveyed agreed or strongly agreed to the question, "How do you feel about designating more Federal lands in your state as wilderness?" Over 96 percent agreed or strongly agreed with the statement, "I enjoy knowing that future generations will be able to visit and experience wilderness areas." As we clearly demonstrate, the agency's Potential Wilderness Area recommendations in this FEIS fail to provide adequate interim protection of the Blue Mountains region's three National Forests' significant but endangered de facto wilderness, nor does it reflect the public desire to protect this vanishing resource.

Section 2(c) of The Wilderness Act, “Definitions of Wilderness,” states:

> A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Ecological benefits of protecting wilderness quality, ecologically more intact areas include: maintaining species diversity, conserving a “reservoir” of ecological processes and a diversity of genetic material, protecting threatened and endangered species, protecting watersheds, maintaining large, contiguous, nonfragmented wildlife habitats, maintaining inherent natural resilience, and serving as a base line for natural conditions to compare with changes in other environments (Dawson and Hendee 2009).

The FEIS in part acknowledges this, while its developed alternatives fail to embody this: “Wilderness serves as a baseline demonstrating the functions of healthy ecosystems that can be contrasted with human activities that change our world. Wilderness areas provide a variety of valuable ecosystem services including carbon sequestration, watershed protection, and air quality, and may contain habitat for numerous threatened and endangered species and other rare biological resources. Managing an area to protect its wilderness character provides unique opportunities and benefits for present and future generations that may otherwise be irreparably lost.” (FEIS pg. 218)

The quality and value of our non-profit conservation organization’s members’ and volunteers’ recreational, educational, natural, aesthetic and other activities throughout the greater project area will be irreparably harmed if the BMFPR FEIS and ROD are implemented. The long term ramifications of this regional, three National Forests, planning document would result in significant adverse impacts to the region’s forests, harming its ecological integrity, wildlife and avian species, and native plants and soil communities, causing further forest fragmentation, and would likely increase the risk of severe fires on public and private lands across the region given that it would open millions of acres of resilient wilderness quality lands to the known harms of logging and other resource management extraction activities. If implemented, the FEIS and ROD would result in irreparable harms to the area's rare more ecologically intact forest environment, wildlife habitat, and scientific and natural recreational values, causing significant harms to the interests of the members and volunteers of our organization. The FEIS and ROD would preclude the current and future ability to learn from ongoing resilient natural forest processes throughout most of the rare remaining more ecologically intact wilderness quality unroaded lands across the three Blue Mountains forests.

As presented, the FEIS proposed alternatives, including the ROD's selected alternative, significantly diverge from scientifically credible research and appropriate management methods for the Blue Mountains region's National Forests. The FEIS analysis fails to accurately and adequately address the ecological rarity and paramount importance of the region's remaining wilderness quality roadless area forest ecosystems. The FEIS fails to responsibly address the critical importance of all these disparate areas across the region's landscape as essential habitat and refugia for ESA and State listed species and regional species of concern. The FEIS fails to adequately address the role all of the wilderness quality roadless area lands play in essential habitat connectivity, providing for the genetic viability of current and future generations of listed species and species of concern. Additionally, the FEIS fails to sufficiently address and accurately disclose that these more ecologically intact locations are rare places across the forest landscape where significant ecological evidence indicates these areas are not outside the natural range of fire cycle and disturbance patterns – elevating their irreplaceable importance in recovering the ecological integrity of the region's public lands forests.

Ecologically the Blue Mountains Forest Plan Revision FEIS analysis and ROD's selected alternative's provisions are in direct contravention to sound scientific recommendations, long-term ecological objectives, the natural structure and cycles of the region's forests, and native species habitat and viability requirements. The FEIS and ROD must be withdrawn and the planning process substantively revised to incorporate ecologically credible science research recommendations and meaningful, enforceable standards and guidelines.

The FEIS and ROD would open the majority of scant remaining wilderness quality public lands to irreparable management degradation, including widespread logging, road building, off road vehicle intrusions, and other management harms. Logging degradation unleashed by this legally deficient process would result in the extensive use of soil community-damaging heavy ground-based logging machinery, resulting in significant irreparable degradation across the region's forests to otherwise rare relatively intact natural forest ecology and biodiversity. The ROD would open logging and management harms across areas that credible scientific research emphasizes are best left to their ongoing natural ecological cycles.

The FEIS and ROD will harm the environment in a number of significant ways that the Forest Service has not objectively disclosed in the FEIS. The EIS provides a scientifically unfounded analysis and a misrepresentation of planning issues and impacts.

The FEIS's developed alternatives and supporting analysis do not meet NEPA's requirements for at least the following reasons:

- The FEIS does not accurately present the range of readily available research on the imperative roles wilderness quality unroaded lands play, including increased forest carbon sequestration, and significantly greater inherent resilience to the likely and as yet unknown impacts of ongoing climatic change, yet this information is foundational to the region's long-term ecological resilience.

- The FEIS fails to objectively disclose and address scientific research that recommends strongly against the opening of over 1.7 million acres of potential wilderness to logging rationales, nor does the FEIS objectively present scientific research addressing the excessive irreparable harms of such logging across the landscapes of all three Blue Mountains forests.
- The FEIS stated purpose and need objectives are not consistent with range of developed alternatives, including the selected alternative, which would open vast areas of wilderness quality unroaded forests to unwarranted and damaging logging and road building. Unroaded, more ecologically intact forests contain many of the larger, more fire-resistant trees in moderate- to higher-elevation forests. Opening these areas to damaging logging would needlessly remove many mature and old trees that currently provide forest structure essential to ongoing natural forest cycles and long-term resilience.
- The FEIS does not adequately disclose and address the project's direct and cumulative effects pertaining to wilderness quality unroaded areas. Direct effects along with widespread cumulative impacts and overall fragmentation from past, recent, and ongoing logging and other management projects throughout the forest, need to be assessed at both a localized and a landscape-scale.
- The FEIS fails to objectively and reasonably consider that its failure to protect all of the rare remaining ecologically intact unroaded areas will severely limit future research on natural forest functioning, resilience, and disturbance cycles and patterns in these rare wilderness quality areas. The region's unlogged, unroaded forests have naturally regenerated across the millennia from recurrent natural disturbance cycles including wildfire. These locations have experienced relatively little or no management impacts in comparison with the region's surrounding extensively managed forest landscape. The FEIS and ROD would unreasonably preclude future scientific research opportunities to learn from the area's rare locations with ongoing natural ecological processes and cycles. It is unfortunate that these future opportunities would be incrementally yet irretrievably lost if this ROD is implemented, as such research could help better inform forest management during this current era of exponentially increasing climate change and cumulative human disturbance across the region's once natural forest landscapes. Indeed, the bulk of credible scientific research pertaining to climate change emphasizes the essential importance of all rare remaining wilderness quality lands, where natural cycles and established resilience are prominent. While the FEIS skirts at these issues, it utterly fails to simply state this reality straight out in a clear manner the public can readily understand, choosing obfuscation and evasion instead.
- The approximately 1.7 million acres of wilderness quality lands that this FEIS and ROD would fail to protect would be far better if protected and set aside from harmful management intrusions. As such these areas could help facilitate better scientific understanding of natural forest processes and functioning. These rare ecologically resilient unroaded areas have an unequalled capacity to serve as templates of relatively intact dynamic natural forest ecological processes, cycles, adaptation and functioning. These remaining unroaded more ecologically intact areas can help inform and guide

> research-based restoration objectives elsewhere, across the region's landscape of severely management altered and degraded forest habitat. Their response and resilience in ever growing climate change situations can help better inform both scientists and land managers in efforts to provide for the long-term resilience of public lands forests.

Despite all the mounds, towering shelves, archived vaults, file cabinets, and internet floods laden with countless volumes and articles of scientific research reports with their varied contravening conclusions and recommendations, it is widely acknowledged that ultimately nature is our best and wisest teacher. Science, if it is to teach us anything, must begin by teaching the awareness of the as yet unfathomable, unknown complexity of this living earth's interwoven natural ecosystems. Given our limited awareness of the full range of forest ecosystems, including the full range of biodiversity, dynamic and localized processes, and complexity, science advises humility, prudence and restraint in our actions. Indeed, the core tenets of NEPA clearly require that agencies follow procedures to ensure that decisionmakers fully consider the environmental consequences of their actions: "Ultimately, of course, it is not better documents, but better decision that count. NEPA's purpose is not to generate paperwork - even excellent paperwork - but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions **<u>that protect, restore, and enhance the environment</u>**. These regulations provide the direction to achieve this purpose." 40 C.F.R. § 1501(c) (emphasis added).

II. The Selected Alternative Must Protect the Last Remaining Wildlands

Among public lands resources, "lands with statutorily-defined wilderness characteristics are of particular importance." *Or. Natural Desert Ass'n v. BLM,* 625 F.3d 1092, 1099–1100 (9th Cir. 2010). In 1964, Congress identified the conservation of such lands as a national priority in the Wilderness Act. 16 U.S.C. § 1131(a). Intended to "secure for the American people of present and future generations the benefits of an enduring resource of wilderness[,]" the Wilderness Act provides for the protection and preservation of federal lands in their natural condition. *Id*. Using unique words found in no other natural resource protection law, Congress defined "wilderness," contrasted with "areas where man and his own works dominate the landscape," as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." *Id*. § 1131(c). By definition, wilderness areas retain their "primeval character and influence, without permanent improvements or human habitation," and retain "outstanding opportunities for solitude or a primitive and unconfined type of recreation." *Id.* Absent Congressional direction in a specific bill, motorized and mechanized forms of transport in lands formally designated as wilderness are prohibited. Environmental policy laws are emphatically clear regarding public lands plan revisions: 36 C.F.R. § 219.7(c)(2)(v) requires units undergoing new plan development or plan revision to "identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System and determine whether to recommend any such lands for wilderness designation." *See Ten Lakes Snowmobile Club v. United States Forest Serv.*, CV 15-148-M-DLC, 2017 WL 4707536, at *2 (D Mont Oct 18, 2017), appeal dismissed, 2018 WL 3045471 (9th Cir. Mar 30, 2018).

There are very few remaining places in the United States that are uninfluenced by human disturbance. Sanderson et al, 2002. The few wild areas that are left correspond to areas on public lands with wilderness characteristics, making this public resource that much more valuable. The reasons for protecting these last remaining wildlands are many. However, when it comes to protection of the last remaining wildlands, including roadless areas and wild rivers, the Forest Service seems much more influenced by local social pressures than by the overwhelming economic, social and ecological reasons for permanent protections of these lands.

Protected wild places provide important recreation opportunities for people from all over the world and associated economic and social benefits to adjacent communities. Recent studies, such as those conducted by the Headwaters Institute, point to the large contribution made to growing western communities through the designation of protected public lands. These studies show that:

- Protected lands help create jobs. Western non-metropolitan counties with more than 30 percent of the county's land base in federal protected status such as national parks, monuments, wilderness, and other similar designations increased jobs at four times the rate of similar counties with no protected federal public lands (345% compared to 83%during the last 40 years).
- These lands also increase incomes. In 2010, per capita income in western non-metropolitan counties with 100,000 acres of protected public lands was on average $4,360 higher than per capita income in similar counties with no protected public lands.
- Protected natural amenities—such as pristine scenery and wildlife—help sustain property values and attract new investments.
- Services jobs are increasingly mobile, and many entrepreneurs locate their businesses in areas with a high quality of life. Conserving lands, while also creating a new visibility for them through protective designations, helps safeguard and highlight the amenities that attract people and business.
- For many seniors and soon-to-be retirees, protected public lands and recreation provide important aspects of a high quality of life. Non-labor sources of income already represent more than a third of all personal income in the West—and will grow as the current elder generation retires.
- Outdoor recreation is important to western economies. For example, in 2010 the Outdoor Industry Foundation reported that active outdoor recreation in Oregon contributed over $7 billion to the state's economy, supporting 141,200 jobs.
- Updated information for 2017-2018 from the Outdoor Industry Foundation reports that these figures have significantly grown. Outdoor recreation in Oregon now supports 172,000 direct jobs, $16.4 billion in consumer spending, 5.1 billion in wages and salaries, and 749 million in state and local tax revenue.

See Headwater Economics, 2012; Rasker, 2006; Rasker et al, 2013; Outdoor Industry Foundation, 2012 and 2018; Lorah, et al 2003; Deller, et al, 2001.

Wilderness, however, is not just a recreation designation. Wilderness plays an important role in other areas of management such as watershed health, refugia for wildlife, preservation of cultural sites, sources of clean air, and as local economic drivers. Moreover, wilderness preservation grows increasingly important to provide reservoirs of biodiversity in the face of global climate change. Untrammeled wildlands can be used as benchmarks for assessing the ecological integrity – e.g. genes, species, and assemblages – and processes – e.g., pollination, demography, biotic interactions, and nutrient and energy dynamics – expected in the natural habitat or region. *See* Karr et al 1995; Pimentel, 2000. These species-rich native communities are also more likely to withstand disturbance. Gelbard et al. 2005.

The FEIS recognizes that:

- Ecological benefits of wilderness include maintaining species diversity, conserving a "reservoir" of ecological processes and a diversity of genetic material, protecting threatened and endangered species, protecting watersheds, maintaining large, contiguous, nonfragmented wildlife habitats, and serving as a base line for natural conditions to compare with changes in other environments.
- Wilderness experiences provide recreational and social benefits including those described as spiritual and educational.
- Wilderness provides social, cultural, economic, scientific, and ecological benefits for present and future generations. Many of America's iconic landscapes include wilderness areas that provide outstanding opportunities for solitude and a primitive and unconfined type of recreation.
- Wilderness landscapes can contain culturally significant and sacred sites important to Native Americans, and historic-era cultural resources that speak to the nation's collective heritage.
- Communities enjoy and value these lands for hunting and fishing, wildlife watching, hiking, equestrian pursuits, and other nonmotorized and nonmechanical uses.
- Wilderness areas are a scarce and dwindling resource, requiring humility on behalf of humanity in order to retain their natural condition and to convey an understanding of human and natural history.
- Wilderness serves as a baseline demonstrating the functions of healthy ecosystems which can be contrasted with human activities that change our world.
- Wilderness areas provide a variety of valuable ecosystem services including carbon sequestration, watershed protection, and clean air, and may contain habitat for numerous threatened and endangered species and other rare biological resources.
- Managing an area to protect its wilderness character provides unique opportunities and benefits for present and future generations that may otherwise be irreparably lost.
- Recommended wilderness areas can preserve wilderness character through management efforts to maintain the five wilderness qualities (natural, untrammeled, solitude or a pristine and unconfined type of recreation, undeveloped and other features) that define wilderness character. This, in turn, can create larger contiguous wild areas and reduce recreation pressures within existing wilderness areas.

FEIS Vol. 1, Chapter 3, p. 215–18.

1. The Proposed Forest Plans Fails To Appropriately Protect Wilderness Values

Unfortunately, despite the overwhelming ecological, social and economic reasons for protecting wilderness values, when it comes to roadless areas[8] and wilderness recommendations the proposed forest plans fall short.

Despite our requests to do so both before and/or during scoping, and the previous DEIS process, the FEIS fails to:

- Adequately and accurately identify all wilderness-eligible lands in the Blue Mountains and include them in the analysis and alternatives;
- Thoroughly examine the impacts of placing all or portions of individual roadless areas under management designations that would not protect their irreplaceable wilderness and unroaded characteristics;
- Offer viable wilderness recommendations commensurate with the ecological qualities, importance, and extent of lands which meet requisite wilderness characteristics; and,
- Appropriately and proactively include areas which help maintain or enhance wilderness characteristics;
- Adequately address and accurately assess key areas and essential connectivity, including these areas within wilderness eligible lands, thereby providing for the viability of the many wilderness and roadless area dependent species.

a. The Forest Service failed to identify and include all wilderness eligible lands in wilderness inventory for the Blue Mountains national forests

All roadless undeveloped areas that satisfy the definition of wilderness found in the Wilderness Act must be evaluated and considered for recommendation as potential wilderness areas during forest plan revisions. In 2010, the Forest Service conducted a Wilderness Needs Evaluation for the Malheur, Umatilla, and Wallowa-Whitman National Forests. Through this process, 76 potential wilderness areas were identified within the Blue Mountains National Forests. These areas cover 705,310 acres, or 13 percent, of the national forest lands. As pointed out in our scoping and DEIS comments, and in correspondence with the agency, this figure does not

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[8] Please note that for the purposes of these comments the term "roadless area" refers to any wilderness-eligible area of federal public land and it does not refer exclusively to the inventoried roadless areas (IRA) identified during the Forest Service' Roadless Area Review and Evaluation (RARE) surveys that were finalized in 1979 or the areas identified in Wilderness Needs Evaluation for the Malheur, Umatilla, and Wallowa-Whitman National Forests (2010), nor exclusively to only those selectively evaluated for this FEIS. Roadless areas, as referred to here, also include additional lands meeting the definition of potential wilderness that were identified by a coalition of conservation groups and presented to the revision team.

represent all of the acreage across the Blue Mountains national forests that meet the criteria of wilderness. The FEIS states the agency included an additional 8 areas for a total of 84 potential wilderness areas, increasing the acreage total slightly to 719,030 acres. Yet this figure still falls far short of including all lands which meet wilderness criteria.

The detailed inventory of all potential wilderness areas in the Blue Mountains we presented to the agency used the same inventory criteria outlined in the Forest Service Handbook (FSH). However, the Forest Service decided, based on a heavily skewed interpretation of the criteria, to disqualify 203 of the 205 non-inventoried roadless areas (IRA) that we had identified as qualifying from inclusion in the inventory. Many of our inventoried areas were field-verified and developed using advanced GIS technology. While we may disagree on certain areas, the disqualification of virtually the entire inventory was and still is unacceptable.

One of the primary flaws in the Forest Service inventory process is related to the definition of a road. Chapter 70 of the FSH inventory criteria identifies roadless areas as areas of sufficient size that do not contain "forest roads . . . or other permanently authorized roads." The definition of forest roads is: "A motor vehicle travelway over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified, or temporary." This definition is a dramatic departure from previous inventory criteria, which defined roadless areas as areas that "do not contain *improved* roads *maintained for travel by standard passenger vehicles*." We believe this criteria best meets the intent of the Wilderness Act and should be retained. Indeed, many existent wilderness areas, including those in the Blue Mountains Forest Plan region, contain what once were roadways and even former railroad ways that have long been disused, no longer accessible by motor vehicles, but which serve well as tails for both human hikers and horseback riders. As such, the Forest Service use of the definition quoted above, fails to meet the reasonableness and accuracy standards of the NEPA, is in contravention with existent wilderness realities, and as such must be revised – including withdrawing the FEIS and revising this analysis to include as potential wilderness areas which meet the previous definition as not containing "forest roads… or other permanently authorized roads."

Applying the Chapter 70[9] language will lead to the exclusion of areas that contain unmaintained routes, high-clearance routes, off-road vehicle routes, administrative routes, other vehicle ways, and vehicle routes that are managed as trails. While inclusion of these routes may not be appropriate in areas the agency is recommending for wilderness, they do not, in and of themselves, exclude an area from consideration. Many roadless areas—and wilderness areas as well—contain such routes, and it is clear that Congress does not view areas that contain such routes as being de facto eliminated from wilderness consideration. We believe the original inventory criteria should be retained, and the presence of unmaintained routes, high-clearance

[9] Note, as the agency disclosed in the FEIS, they utilized the FSH 1909.12 Chapter 70 from 2007, which is no longer effective. It was replaced in 2008, and most recently revised and replaced in 2015. The FEIS fails to disclose this reality anywhere in the FEIS. Use of an outdated directive, when the new one is readily available and has replaced the former violates the accuracy standards of the NEPA and violated the agency's own internal directives. Further, the FSH of 2007 is no longer readily available to the public, so verifying agency claims as to its contents is not reasonably possible, again this violates the NEPA.

routes and the like should be addressed in the evaluation process, not the inventory process. Not only did the Malheur National Forest rejected our entire inventory outside of IRAs, it went a step further and dropped entire roadless areas, again based on a flawed criteria process. As we've been stating throughout the whole forest plan revision process, we strongly urge you to add the Flag Creek, North Fork Malheur, Silver Creek and Fox Creek areas back into the inventory.

We also remain concerned that the agency misapplied wilderness evaluation and management criteria prematurely during the inventory stage. This should not happen until the evaluation stage. There appear to be a number of areas/acres that have been eliminated or not inventoried. These situations are the most prevalent in areas where setbacks or buffers from roads or previous disturbances have been employed or large contiguous areas have been eliminated from the roadless inventory because they were connected by an isthmus.

b. The FEIS fails to adequately examine the impact of placing all or portions of roadless areas under management designations that would not protect their wilderness characteristics

The FEIS fails to include the requisite examination of the direct effects, indirect effects and cumulative impacts of the preferred alternative proposal to place an IRA or other roadless area in a management zone that allows activities that could impair its wilderness character.

The Roadless Area Conservation Rule FEIS offers a detailed description of some of the issues that should be studied, described and discussed for each alternative in a forest. These issues include:

- The projected amount and impact of road construction in IRAs;
- The costs associated with maintaining new roads in IRAs;
- The risks of reducing water quality in IRAs;
- Impacts to air resources from IRA development;
- Economic impacts;
- Consequences of and for fire and fuels management in IRAs
- Impacts of insects and disease in IRAs;
- Impacts to the size of roadless areas;
- Impacts to IRAs of development at various elevation distributions;
- Impacts to terrestrial animal habitat, including fragmentation and connectivity, edge effects, habitat suitability and effectiveness, early successional habitat, game species and late-successional habitat;
- Impacts to aquatic animal habitat and species in IRAs, including fragmentation and connectivity, water hydrology and stream channel morphology, habitat complexity, water

quality, pools, riparian vegetation, introduction of nonnative species and diseases and over-harvest;

- Impacts to terrestrial and aquatic plant species in IRAs, including non-native invasives, habitat fragmentation and effects of temporary roads;
- Impacts to threatened, endangered, proposed and sensitive species in IRAs;
- Impacts to research, monitoring and reference landscapes in IRAs;
- Consequences for non-mechanized, mechanized and motorized recreation in IRAs;
- Impacts to scenic quality in IRAs;
- Consequences to heritage resources in IRAs; and
- Impacts from IRA development on existing wilderness and the possibility of future wilderness designation.

Unfortunately, the FEIS does not contain even the most basic information on the impacts of the proposed action and the proposed alternatives on the wilderness character of the Blue Mountains roadless lands. For example, the FEIS does not:

- Thoroughly examine the impacts of each alternative on the 18 issues listed above from the Roadless Area Conservation Rule Final EIS.
- Consider the impacts of the alternatives on the roadless lands we presented to the agency.
- Consider the impact of allocating 428,700 acres of IRAs as backcountry motor vehicle use (MA 3B) in their 'preferred alternative,' suitable for both summer and winter motor vehicle use. (See FEIS Vol. 1 p. 226-227). Despite our raising of this significant issue in our previous DEIS comments, the agency completely disregarded this issue, taking the contrary path of actually increasing motorized intrusion into IRA's by 74,900 acres as compared to the DEIS's original 353,800 acres (Vol. 1 p. 197-198).
- While the FEIS included a breakdown by alternative and by management areas disclosing how IRAs would be allocated, it did not discuss how the activities allowed in each MA could damage roadless areas wilderness character.

Under all of the alternatives offered, roadless lands face threats to their wilderness character from commercial logging, fuels reduction, "restoration" activities, road building, and ORV use (both winter and summer). Despite these threats, the FEIS discusses only a few of the potential impacts, and never in a comprehensive and systematic way.

NEPA, 42 U.S.C. § 4321 et seq., and the CEQ's implementing regulations, 40 C.F.R. §§ 1500-1517, require that each federal agency prepare an EIS for every major federal action significantly affecting the environment. 42 U.S.C. § 4332(c). The purpose of an EIS is to inform the decision-makers and the public of the significant environmental impacts of the proposed action, means to mitigate those impacts, and reasonable alternatives that will have lesser environmental consequences. An EIS must assess the environmental impacts of the proposed action, including direct effects, indirect effects, and cumulative impacts. 40 C.F.R. §§ 1502, 1508.7-1508.8.

NEPA also requires federal agencies to use high quality, accurate scientific information and ensure the scientific integrity of the analysis in an EIS. See 40 C.F.R. §§ 1500.1(b), 1502.24.

Abdicating its responsibility to follow the above requirements, the Forest Service has presented deficient analysis and unfounded assertions throughout the FEIS that fails to accurately address and disclose the direct effects, indirect effects, and cumulative impacts of placing the IRAs and other roadless lands in zones where development is allowed. As a result, if implemented the preferred alternative (and to a greater or lesser extent any of the proffered alternatives) would result in irreparable harms to the wilderness character of a significant extent of the remaining irreplaceable roadless areas across three national forests. The FEIS therefore violates FSH 1909.12 by failing to adequately and accurately "[i]nclude site specific statements of the environmental consequences that a nonwilderness designation would have on…roadless area(s)." Furthermore, the plan fails to sufficiently and accurately, with meaningful provisions for enforceable standards, "[d]iscuss mitigation measures to avoid or minimize the impact or loss of wilderness characteristics."

The FSH at 1909.12-92-1, 4.19(c)(5) states that a land and resource management plan must "[d]escribe the potential environmental consequences of a wilderness and a nonwilderness recommendation." At FSH 1909.12-92-1, 4.19(c)(5)(b) the Forest Service is required to: discuss the impact on the roadless area of a wilderness designation and the impact of each nonwilderness prescription. Show the social and economic effects in each case; and include mitigation, if any, for loss of wilderness characteristics and the effects on plant and animal communities. The FEIS fails to offer this information as required in an accurate and meaningfully comprehensive analysis. It is ethically and legally insufficient to make "conclusory" or "perfunctory references" to cumulative impacts or to continue to use the same boilerplate language throughout the EIS process. *Natural Resources Defense Council v. Hodel*, 865 F.2d 288, 298-99 (D.C. Cir. 1988). Cumulative effects analysis requires "quantified or detailed information. . ." *Neighbors of Cuddy Mountain v.U.S. Forest Serv*., 137 F.3d 1372, 1379 (9th Cir. 1998). "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Id*. at 1380.

More precisely, the FEIS fails to consider the impacts the preferred alternative and the other alternatives would have on the natural integrity, apparent naturalness, remoteness, solitude, special features, manageability, logical boundaries, and special places or values in the Blue Mountains' IRAs and other roadless areas. The effect of the alternatives on the wild character of the affected roadless areas were improperly studied in the DEIS, while the FEIS overall merely parrots its unsubstantiated assertions absent requisite analysis and definitive clarity; therefore it does not satisfy the detailed analysis requirements set forth in 36 CFR 219.17.

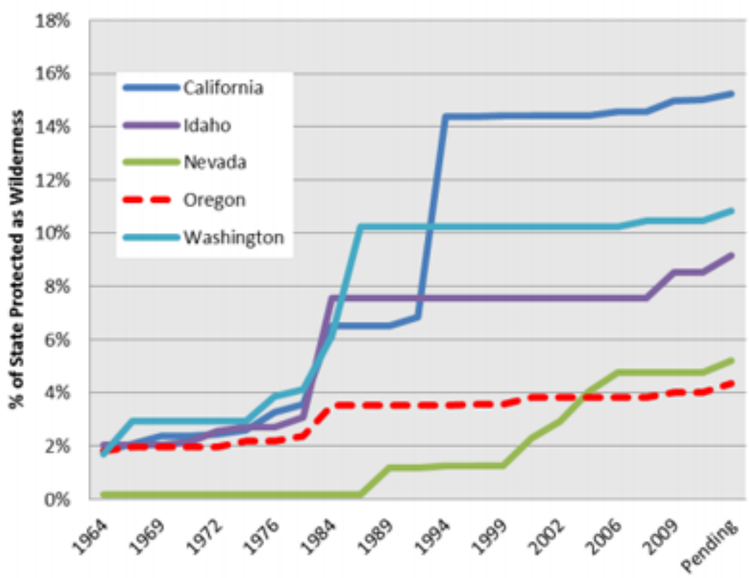
c. The selected alternative must offer more wilderness recommendations and preserve the wilderness characteristics of roadless areas

Of the 1.8 million acres conservationists identified as potential wilderness, the preferred alternative would only allocate 70,470 acres, or a mere 3.9%, to recommended wilderness. The FEIS Vol. 1, Chapter 3, page 223 justifies this by stating that "additional wilderness designation is not necessary within the Blue Mountain national forests. Protection of areas with wilderness potential including the biological species and resources that they contain may be better achieved through alternative land management designations or other legal authorities".

The possibility of subsequent NEPA documents fails to address the impacts of placing IRAs and other land with wilderness potential in zones where management activities are allowed that would diminish their wilderness character. The Forest Service must comply with NEPA "at the earliest possible time to insure that planning and decisions reflect environmental values." 40 C.F.R. § 1501.2. A project-by-project NEPA analysis will not and cannot address the combined and cumulative regional and local environmental impacts of allowing such development to occur in the first place. As the Forest Service concludes on page 1-15 in the Roadless Area Conservation Rule FEIS:

> Regardless of how well-informed individual decisions may be at the local level, any new road building in inventoried roadless areas still results in a loss of roadless characteristics. When local officials evaluate the impacts of their decision to build a road into a roadless area, the incremental effect of the decision is considered. However, when these individual decisions are aggregated over time…the resulting ecological and social outcomes resulting from the loss of roadless areas may become substantial.

Such losses are substantial indeed with this FEIS and ROD, as only 70,470 acres would receive real protection, leaving 1,729,530 acres of wilderness quality unroaded lands at risk of irreparable degradation. The conclusion that "additional wilderness designation is not necessary within the Blue Mountain national forests" is unfounded and in contravention to the vast majority of scientific research concerning the imperative need to protect the remaining ecological integrity of public lands. Only four percent of public lands in Oregon are currently protected as wilderness; this is less than half of what Washington and Idaho have protected and nearly four times less than what California has protected. This is despite the fact that 46 percent of the total land area in Oregon is public lands while that number in Washington is only 23 percent and in California 34 percent. The FEIS preferred alternative would only provide protection or a mere 70,470 acres of wilderness quality roadless lands. This would leave the vast majority – 1,729,530 acres of the remaining more ecologically intact roadless lands with irreplaceable wilderness qualities – open to the irretrievable degradation of management actions from road construction to logging to off road vehicle abuse and other significant environmental harms. Such management as proposed in the FEIS, offering protection to only a paltry 3.9% of wilderness quality lands, is contrary to all credible scientific recommendations pertaining to wilderness eligible roadless area lands, blatantly failing the NEPA, which requires federal agencies to use high quality, accurate scientific information and ensure the scientific integrity of the analysis in an EIS. *See* 40 C.F.R. §§ 1500.1(b), 1502.24. Leaving the vast majority - 96% of roadless area wilderness quality lands - vulnerable to irreversible management degradation, without explicitly disclosing the relevant scientific research or accurately and comprehensively addressing the "the environmental impacts of the proposed action, including direct effects, indirect effects, and cumulative impacts" violates the NEPA, 40 C.F.R. §§ 1502, 1508.7-1508.8.



The differences in protected wildlands is not because the reasons for protecting roadless areas in Oregon are less pervasive then in neighboring states.

Contrary to the scientifically unsubstantial conclusion the agency has reached in both this FEIS, and its prior "Wilderness Need Evaluation" of March 2010, it is scientifically irrefutable that the Blue Mountains emphatically do need significantly greater extents of protected wilderness areas. Increased recreation pressure is putting demands on existing designated wilderness. If this is not planned for, it may adversely affect these areas' characteristics (for example, the Umatilla National Forest is surrounded by growing communities that are placing increasing demands on existing wilderness areas, as the visitor statistics indicate). Connectivity across the landscape is not being considered and critical species assemblages that need significantly greater representation in the wilderness system are being ignored. None of the seven designated wilderness areas in the Blue Mountains are immediately adjacent to one another, and some are separated by an interstate highway or developed valley. Alone, none of these existent wilderness areas are capable of providing the habitat range requisite to support the long-term home range, genetic variation, and population viability of wilderness dependent and associated species. It is well known that species will greatly benefit from a more connected landscape in the face of the multiple adverse challenges they must address in order to survive and thrive, from the challenges of habitat fragmentation, seasonal recreational overuse (hunting season and off-road vehicle intrusions and abuse in particular), adjacent private lands development and traffic, and the exponentially growing impacts of ongoing climate change. Yet the agency has failed to adequately disclose or effectively address the abundant scientific research emphasizing such ecological realities. Furthermore, dry grand fir, dry Ponderosa pine, and moist forests are "under represented" in wilderness areas, and 55,000 roadless acres of this type have been identified throughout the Blues. There are strong scientific reasons for evaluating these areas thoroughly. The abject failure of the FEIS to adequately disclose and address these significant ecological realities represents an egregious violation of the clear requirements and intent of the NEPA.

2. Suggested Recommended Wilderness Areas For The Selected Alternative

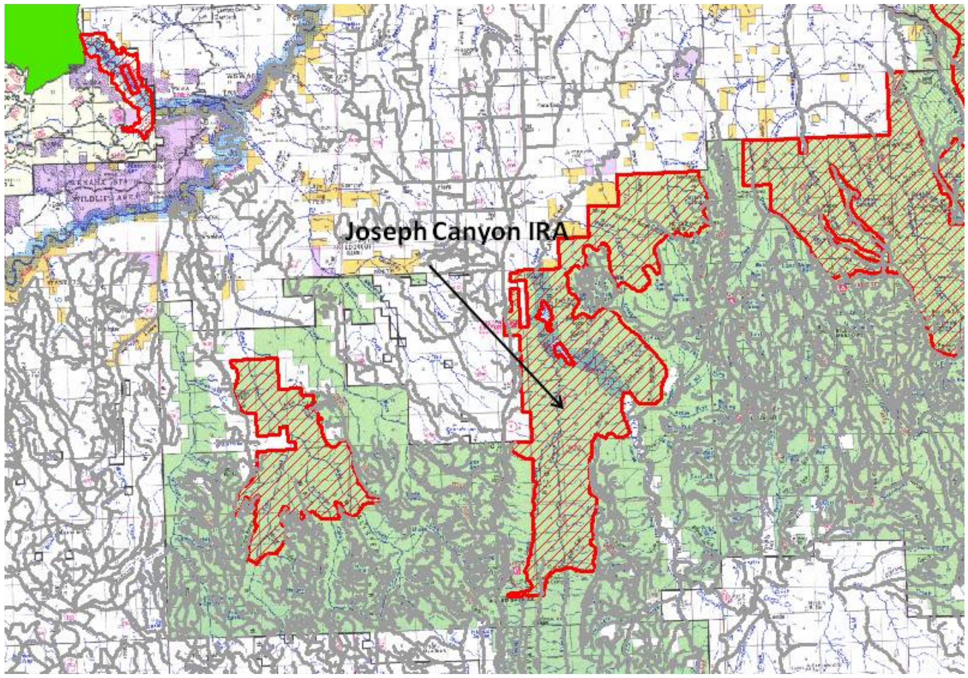
All of the "alternatives" presented in the FEIS are scientifically, legally, and ecologically deficient. At best, as with alternative C, they incrementally hasten the environmental degradation of the region, and the continued irreparable diminishment of native species at risk and their vulnerable habitats. While we strongly supported Alternative C's recommendations for 49 wilderness additions totaling 505,000 acres, this alone is vastly insufficient to begin to address scientifically founded recommendations concerning the retention and protection of wilderness and roadless area characteristics wherever they may remain. Though Alternative C captures some of the areas that should be allocated to Preliminary Administratively Recommend Wilderness Area (MA 1B), it is still vastly deficient, as it would open up 72% of the 1.8 million acres of wilderness quality public lands to irreparable management harms. Such a paltry recommendation for wilderness as represented by this FEIS is both legally and scientifically inexcusable. However, it was not alternative C that was selected, but the agency's preferred alternative, leaving 96% of the region's more intact wilderness quality lands open to degradation. One small but clear example of the FEIS's many deficiencies can be found in its piecemeal recommendations for what it refers to as the Murderer's Creek Roadless Area, where its proposal omits much of the approximately 44,000 acre contiguous roadless area, including significant portions of Aldrich Mountain, Dry Cabin, and Murderer's Creek wilderness quality lands (see the section on this area below).

As outlined above, the reasons for protecting wilderness resources are numerous. The specific reasons for protecting areas across the Blues are even more voluminous. Given that the timeline for this NEPA project process is limited, and addressing each wilderness quality area in the detail deserved would require considerably greater time than is allotted, in the interests of brevity, clarity, and NEPA timelines we have chosen to highlight just one representative roadless area from each national forest. These choices do not diminish the importance of the other roadless areas, but instead underscore their importance, especially in addressing otherwise irretrievable habitat connectivity, refugia, natural ecological resilience, locations where natural environmental patterns and cycles are still prevalent, and the imperative importance of all of these in beginning to meet the growing challenges and unknowns of evermore manifesting climate change across the landscape. (NEPA requires the agency conduct site-specific research for each affected unroaded area, such as these examples illustrate here. The FEIS fails to begin to do so, and requests for copies of its supporting analysis that supposedly are in the 'project record' have been unanswered thus far, though these were given early in the Objection period – no replies from the agency have been received at all.)

Joseph Canyon (Wallowa-Whitman National Forest): This roadless area lies adjacent to State Highway 3 on the northern boundary of the Wallowa-Whitman National Forest, 20 miles north of Enterprise. The size estimates range from 25,904 acres to 40,221 acres. The area is well known, largely because of its proximity to State Highway 3 and popular roadside viewpoint that overlooks the 2,000-foot depths of Joseph Canyon.

On page 23, the Wallowa-Whitman National Forest Review of Areas with Wilderness Potential (March 2010) states that this area:

is noted as an example of the rugged topography in northeast Oregon, characterized by deep canyons with very steep, grass-covered side slopes interspersed with numerous exposed basalt layers. Typical of the region, southern and western slopes are non-timbered with native bunchgrass ecosystems, while many northern and eastern slopes are heavily forested with Douglas-fir and Ponderosa pine being the dominant tree species



***Joseph Canyon Roadless Area** provides critical wildlife habitat, fisheries habitat, and quiet recreation in an otherwise heavily roaded landscape (roads in grey). This Roadless Area also contains Ponderosa Pine Woodlands and old growth forests rare to the area.*

All streams in the Joseph Canyon Roadless area are used by anadromous fish and provide spawning habitat for salmon and steelhead. The area includes Swamp Creek where it is designated as a Wild and Scenic River and includes the Oregon Conservation Strategy Area BM-24. The area is renowned for wildlife and includes Ponderosa Pine Woodlands and old growth forests. There is great historical value that includes all of the major peoples that have shaped the region; the Nez Perce Indians; pioneers and settlers, and early Forest Service. The trails have been used since time immemorial. The area is currently very popular with backcountry hunters and horse-back riders.

During a meeting to decide which areas to include as recommend wilderness in the revised forest plan for the Wallowa-Whitman National Forest, the Forest Service identified the semi-primitive mechanized recreation *opportunities* as the only reason why the Joseph Canyon should not be administratively recommended as wilderness. Wallowa-Whitman National Forest Proposal Meeting Notes, La Grande Oregon (January 29, 2008).

Historically, motorized use in this area has been non-existent. The recent intrusions of motorized use, if anything, should not be employed to drop the area from wilderness consideration, but instead underscore the imperative justification to protect this wild area before it is too late. Bear hunters recently discovered ATV tracks at the confluence of Davis and Swamp Creeks and reported this to ODFW due to their concerns about impacts to the trails from ATV's. ATV's had never been in this area before. In contrast, traditional quiet recreation has been well established for as long as anyone can remember. The Forest Service must take action to protect this area before the long tradition of quiet recreation is lost forever.

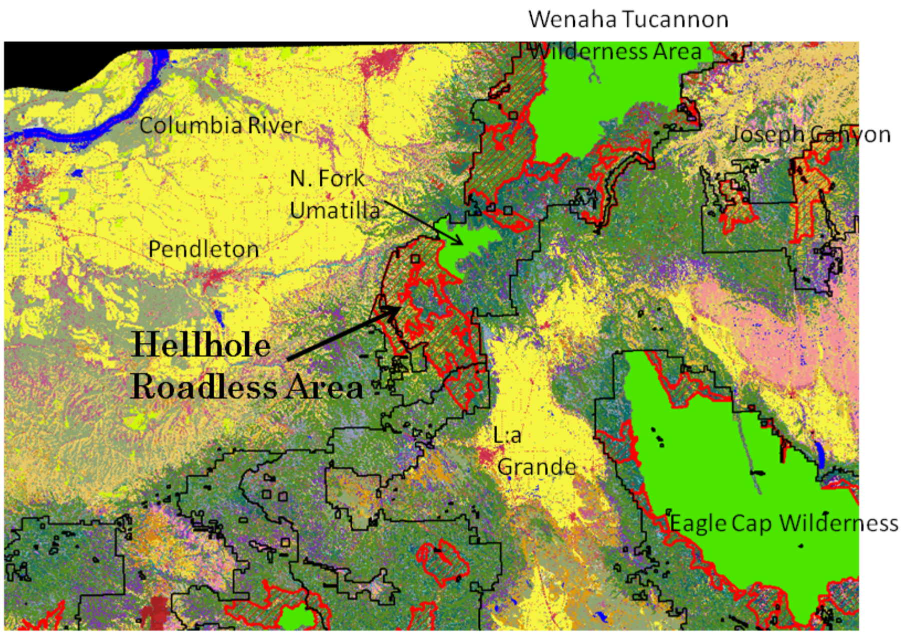
Furthermore, the benefits of permanently protecting this area's history, culture, and ecology for current and future generations far outweigh the limited motorized opportunities that benefit only a small fraction of people at great public expense and considerable environmental degradation. There are millions of acres of other areas for forest users to take advantage of motorized recreation opportunities.

Reasons for administrative wilderness recommendation

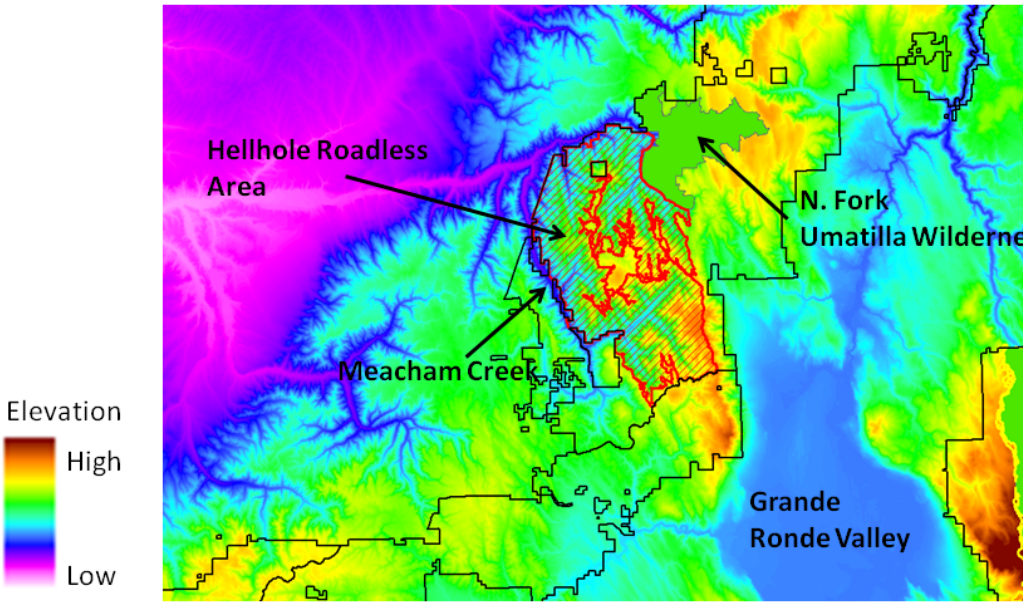
- The Joseph Canyon Roadless Area has a well-established and long history of backcountry hunting, horseback riding, and hiking, and is increasingly threatened by OHV's. The potential for conflict between user groups in this area is very high.
- Chico Trail has high historic value as a quiet use trail.
- Natural quiet and solitude values need protecting in Joseph Canyon.
- The Forest Service needs to safeguard wildlife habitat security in this otherwise roaded area.
- The Joseph Canyon Roadless Area is an important connectivity corridor between the Hells Canyon National Recreational Area/Wilderness and the Wenaha-Tucannon Wilderness. Joseph Canyon is a "stepping stone" and stop over area for dispersing and migrating wildlife.
- The Joseph Canyon Roadless Area contains old growth dry plant association groups currently underrepresented in the Blue Mountains Wilderness preservation system.
- The Joseph Canyon Roadless Area contains important steelhead spawning habitat and a Wild and Scenic River.

Yet despite the clear recommendations of ecological science, and the importance given to these qualities in developing the Roadless Area Conservation Rules, the FEIS fails to adequately disclose and address relevant wilderness area qualities, and related scientific research. Instead, the FEIS proposes at best only a paltry 6,750 acres out of 40,221 acres for inclusion in wilderness protected lands – and only proposes this in just one alternative, Alternative C. The remainder of the developed alternatives fail to provide any protection what-so-ever for these wilderness quality lands. Implementation of the agency's Preferred Alternative E-Modified would provide no protection for this treasured wilderness quality roadless area, resulting in irreparable harm to its ecological character, the natural recreation of current and future generations, and the numerous native species dependent for their very survival on this rare remaining roadless area ecosystem. Such harms that the selection of the preferred alternative would cause are in egregious contravention to the requirements of environmental policy laws, scientific research recommendations, and the responsibilities entrusted to the agency to properly manage federal public lands.

Hellhole (Umatilla National Forest): Just north of Mt. Emily and about 10 miles out of La Grande lies an enormous area of canyons and forests that occupies one of the most connective, undeveloped regions of lands left on the Umatilla National Forest. Interestingly, the actual "Hellhole" is seldom visited and considered deep backcountry. It further forms a connection with the tiny North Fork Umatilla Wilderness Area and then more roadless country to the north that adjoins the Wenaha-Tucannon Wilderness Area. This is a critical connective corridor. The Hellhole is remote, has high natural solitude, and is a perfect place to let natural systems function (see Figures below). The Hellhole Roadless Area should be eagerly proposed and designated as Wilderness. It would be an asset well beyond that which most people understand. The area provides a large area of big game winter range. There are many old growth forests throughout the area.



***Hellhole Roadless Area** overlaid on a land cover map. The Hellhole extends across an important corridor of the Umatilla National Forest and forms a critical large scale animal movement and plant migration corridor. Wilderness designation would be the best and highest use of this land for many reasons, including climate change preparation.*



Hellhole Roadless Area *on Digital Elevation Model. This image illustrates that the Hellhole Roadless Area boundary includes high ridges along the Southeast boundary and then drops down to Meacham Creek (West boundary) and the Umatilla River (North boundary). Reserves that include broad elevational gradients have exceptional value for biological conservation. The Hellhole is one of the most important areas to protect on the Umatilla National Forest.*

Concerning the large acreage size of this rare roadless area, with conservation estimates are still out as to the its total size, a review of Rare II agency documents discloses the total acreage as 69,502 acres. Indeed, a Federal Register notice for the adjoining "Plentybob Project" from 1999 discloses that the project bordered along 53,250 of Hell Hole's roadless areas. Yet the FEIS proposes in their preferred alternative to protect only about 32% of this ecologically much more intact, wilderness quality roadless area – leaving an unacceptable 68% of the area open to significant management harms. Again, such a proposal defies credible scientific recommendations and violates both the NEPA's and NFMA's requirements concerning sound science and full disclosure, as well as wildlife species viability respectively. While Alternative C fares better, it still would leave 2,431 rare roadless acres open to irreparable harms, while failing to meet NEPA's requirements concerning scientific integrity, full disclosure, expert advice, and accurate analysis.

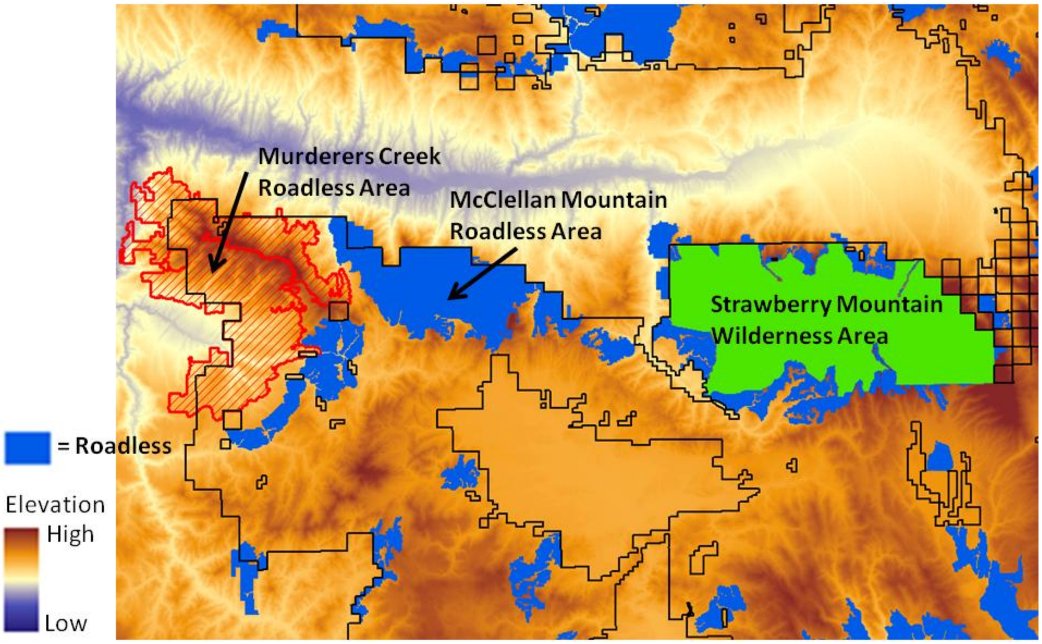
Murderer's Creek (Malheur National Forest): Aldrich ridge and the surrounding approximately 49,924 acre roadless area that has been referred to as the Murderer's Creek Roadless Area is an ecologically rare never-logged undeveloped roadless area forest. The contiguous roadless extent of this area includes the 22,660+ acre Aldrich, Dry Cabin, & Cedar Grove inventoried and uninventoried roadless areas, in addition to adjoining BLM and Oregon State lands, and the Todd roadless area, along with a mix of other uninventoried unroaded contiguous forests.

This area includes redband trout and steelhead salmonid spawning streams and focal old forest habitat for American marten; wolverine; goshawk; Lewis,' black-backed, pileated and other woodpeckers; a host of neotropical migrant and native avian species; and other old growth forest dependent species (see photo). Its forests include the only Alaskan Yellow Cedar Grove remaining in the greater region. The area supports an abundant diversity of rare native forest flowers and plants. Forest soil communities are among the most ecologically intact remaining in the Blue Mountains region. The roadless forests include numerous springs, seeps, bogs, marshes, ponds, and waterways. Evidence of pre-European settlement era native presence abounds, including obsidian flake scatter sites, hunting points, trails, and campsites. Its watersystems are important salmonid tributaries to the Middle Fork John Day River. Adjoining roadless areas (Field Peaks, Moon Mountain and others) connect this large roadless expanse with the Strawberry Wilderness to the east and the Black Canyon Wilderness and Spanish Peaks roadless in the Malheur National Forest to the west.

This roadless area has been proposed for wilderness since the 1970's. Ecologically inappropriate harmful Forest Service logging and management projects, including the Aldrich, JOBS, Billy I and II, Thorn, and others, have been the source of public community contention, appeals, and litigation over the course of the previous decades. Each of these projects has been prevented from incurring harms in this rare ecologically intact large roadless area.

The area is poised to play an irreplaceable role in the maintenance of numerous regional and listed species and species of concern. Far ranging species such as wolves, wolverine, and lynx have potential habitat, refugia, and transitory connective habitat with adjoining roadless and wilderness to the east and west located along and near the geological fault line that raised the Aldrich ridge and connected ridges spanning from the Ochoco to the Strawberry wilderness.

It is imperative that the adopted forest plans provide permanent protection for this rare ecologically intact forest ecosystem and the many wildlife, avian, botanical, and aquatic regional species of concern and federal and state listed species this area supports. The forest plans must protect the unlogged roadless character of the entire contiguous approximately 49,924 acre (+/-) roadless potential wilderness area, and begin the substantive process towards its eventual wilderness designation.



***Murderer's Creek Roadless Area** (red boundary): Protecting the East-West corridor stretching from the Strawberry Mountains and across the Aldrich Mountains is essential for connectivity. Murderer's Creek Roadless Areas is the largest contiguous Roadless Area in this area serving as critical core habitat for wildlife.*

Despite the irreplaceable ecological importance of the Murderer's Creek – greater Aldrich Mountain roadless area, the FEIS only proposes protection for it in their Alternative C, and then protecting only 22,660 acres, leaving 27,264 acres - over half of this rare wilderness quality area - open to irreparable management harms, while having the audacity to call this a "conservation alternative." Additionally, among the inconsistencies in the alternatives, is the agency's preferred alternative protection of 430 more acres of McClellan Roadless Area than is protected as potential wilderness in the so-called 'conservation' alternative. Yet, no viable explanation is disclosed for this mystifying discrepancy between these two different figures, representing yet another inconsistency in an FEIS rife with numerous errors, be these procedural, factual, legal, as well as scientific, they abound throughout this legally non-compliant FEIS.

3. The FEIS Based Its Dismissal Of Potential Wilderness Areas On An Outdated No-Longer-Effective Forest Service Handbook From 2007

As disclosed on page 220 of the FEIS, "six factors and criteria from the Forest Service Handbook (FSH 1902.12, Chapter 70 Subpart 72.31; 2007) were used to assess wilderness need." In this the Forest Service violated the clear requirements of the NEPA, employing a no longer effective, outdated version of the Forest Service Handbook, the criteria of which pertaining to wilderness evaluation is vastly different and divergent from the current criteria directing such evaluations as stated in the Forest Service Handbook 1909.12 Chapter 70 subpart 72.1 of 2015. No explanation or disclosure of this is given in the FEIS, also in violation of the NEPA's requirements for accuracy, expert advice, and public accessibility for that matter, as the 2007 FSH could not be located online or in a manner readily available for the participating public, having been replaced years ago by first an apparent 2008 version and now the current

2015 FSH directives. Indeed, as the FEIS was released in late spring/early summer of 2018, there is no viable excuse on the agency's part for failing to update their analysis – especially on such a critically substantive issue – when they have had over 3 years since the 2015 FSH became effective on January 30, 2015.Instead the agency maintained its reliance on the outdated, no-longer-effective six criteria from 2007. These criteria actually are NOT from the portion of the FSH concerning wilderness evaluation points (which actually are similar in many respects in both the 2007 and 2015 versions), but instead are from a later "Factors" section (subpart 72.31) which was dropped entirely from the 2015 version, and no longer exists as such. Yet, despite the agency having dropped these 6 points over 3 years ago, they are misrepresented in the FEIS as being pertinent to assessing whether additional wilderness was "needed." Such a contrived "need" assessment is in contravention to the vast majority of credible science which emphasizes the critical importance of all areas where wilderness quality lands may yet exist. It is little wonder that in the revised versions of the FSH that are currently effective, these 6 points have been dropped completely and no longer exist. Their use in the FEIS blatantly violates the requirements of the NEPA. Yet, somehow, the BMFPR team decided to employ these archaic scientifically unfounded points in their assessment of potential wilderness. These no longer effective 6 points are disclosed in the FEIS as:

1. The location, size, and type of other wilderness areas in the general vicinity and their distance from the proposed area. Considering accessibility of areas to population centers and user groups. Public demand for wilderness may increase with proximity to growing population centers.
2. Present visitor pressure on other wilderness areas, the trends in use, changing patterns of use, population expansion factors, and trends and changes in transportation.
3. The extent to which nonwilderness lands on the national forests or other Federal lands are likely to provide opportunities for unconfined outdoor recreation experiences.
4. The need to provide a refuge for those species that have demonstrated an inability to survive in less than primitive surroundings or the need for a protected area for other unique scientific values or phenomena.
5. Within social and biological limits, management may increase the capacity of established wildernesses to support human use without unacceptable depreciation of the wilderness resource.
6. An area's ability to provide for preservation of identifiable landform types and ecosystems. Consideration of this factor may include utilization of Edwin A. Hammond's subdivision of landform types and the Bailey-Kuchler ecosystem classification. This approach is helpful from the standpoint of rounding out the National Wilderness Preservation System and may be further subdivided to suit local, subregional, and regional needs.

(FEIS pg. 220)

The current criteria given by the 2015 FSH that the agency was legally required to utilize in revising and updating both the DEIS analysis, as well as the 2010 Blue Mountains Wilderness Evaluation, for this FEIS states a different, less human-centric 5 points analysis in evaluating potential wilderness:

1. Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable (apparent naturalness). Consider such factors as:

a. The composition of plant and animal communities. The purpose of this factor is to determine if plant and animal communities appear substantially unnatural (for example, past management activities have created a plantation style forest with trees of a uniform species, age, and planted in rows);

b. The extent to which the area appears to reflect ecological conditions that would normally be associated with the area without human intervention; and

c. The extent to which improvements included in the area (sec. 71.22 of this Handbook) represent a departure from apparent naturalness.

2. Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation. The word "or" means that an area only has to possess one or the other. The area does not have to possess outstanding opportunities for both elements, nor does it need to have outstanding opportunities on every acre.

a. Consider impacts that are pervasive and influence a visitor's opportunity for solitude within the evaluated area. Factors to consider may include topography, presence of screening, distance from impacts, degree of permanent intrusions, and pervasive sights and sounds from outside the area.

b. Consider the opportunity to engage in primitive-type or unconfined recreation activities that lead to a visitor's ability to feel a part of nature. Examples of primitive-type recreation activities include observing wildlife, hiking, backpacking, horseback riding, fishing, hunting, floating, kayaking, cross-country skiing, camping, and enjoying nature.

3. Evaluate how an area less than 5,000 acres is of sufficient size to make its preservation and use in an unimpaired condition practicable.

4. Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historical value. These values are not required to be present in an area for the area to be recommended for inclusion in the National Wilderness Preservation System, but their presence should be identified and evaluated where they exist. Such features or values may include:

a. Rare plant or animal communities or rare ecosystems. Rare can be determined locally, regionally, nationally, or within the system of protected designations.

b. Outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features.

c. Historic and cultural resource sites. (Confidentiality requirements with respect to cultural resource sites must be respected (25 U.S.C 3056)).

d. Research natural areas.

e. High quality water resources or important watershed features.

5. Evaluate the degree to which the area may be managed to preserve its wilderness characteristics. Consider such factors as:

a. Shape and configuration of the area;

b. Legally established rights or uses within the area;

c. Specific Federal or State laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics;

d. The presence and amount of non-Federal land in the area; and

e. Management of adjacent lands.

(FSH 1909.12_70, pg. 11-12, effective date 1-30-2015)

The emphasis and focus of these two versions of FSH directives are significantly divergent. The 6 “Factors” ‘wilderness evaluation’ points of the former 2007 directives are human-centric in their focus. The current 2015 evaluation points appear to have evolved to incorporate more of the significant ecological science that has been published since 2007 on the importance of maintaining ecological integrity where it may yet exist. There is little doubt that had the agency utilized the current effective FSH of 2015, or for that matter utilized the real wilderness evaluation points found at 72.1 in the 2007 version, the results of such disparate analyses would have been vastly different, with greater recommendation for wilderness quality areas than has incurred in this deficient NEPA analysis. NEPA requires a high degree of accuracy. The agency may not ‘cherry-pick’ certain segments of environmental policy law, elevating these above others. The agency may not employ outdated directives when these have been superseded by more current directives. The agency may not utilize portions of prior FSH directives that have been withdrawn and no longer exist. Yet, in this FEIS, that is exactly what the BMFPR team has done in contriving their analysis to deny wilderness recommendations to the vast majority of wilderness quality lands across the Blue Mountains National Forests. Such “analysis” violates the mandates of environmental policy laws. The misrepresentations related to this in the FEIS are tantamount to intentional deception, deceiving the participating public while resulting in scientifically unfounded arbitrary and capricious planning “alternatives.” The FEIS as such must be withdrawn, and a legally compliant NEPA analysis conducted utilizing accurate methods, expert advice, and based upon the recommendations of credible science.

4. The Adopted Forest Plans Must Incorporate Meaningful Standards And Enforceable Guidelines For Congressional Designated Wilderness Areas, Recommended Wilderness Areas And Wilderness Study Areas

In the FEIS, the revised Forest Plan for the Blue Mountains National Forests has resulted in significantly reduced management standards. Across the spectrum of management categories, standards have been largely replaced by non-binding "desired conditions" and "guidelines," which the Forest Service may disregard in project-level decisions at its sole discretion.

According to the Forest Service, standards are the only plan components that "must be followed when an action is being taken to make progress toward desired conditions." "Standards differ from guidelines in that standards do not allow for any deviation without a plan amendment." In other words, standards containing the word "will" or "shall" are binding on forest management activities, whereas guidelines containing the word "should" and other plan components do not constrain project-level decisions. *See Norton v. Southern Utah Wilderness Ass'n*, 542 U.S. 55, 72 (plan decisions are not enforceable unless "language in the plan itself creates a commitment binding on the agency"). The problem with this approach is that it contradicts the mandates of NFMA and its 1982 regulations, and makes informed analysis of environmental consequences under NEPA improbable if not outright impossible.

The Forest Service enjoys substantial deference in its interpretation of the intent of forest plan guidelines. "Agencies are entitled to deference to their interpretation of their own regulations, including forest plans." *Hapner v. Tidwell*, 621 F.3d 1239, 1251 (9th Cir. 2010) (internal quotation omitted). Many of the guidelines in the revised Forest Plan contain the discretionary word "should," not mandatory terms such as "will" or "shall." *See U.S. v. UPS Customhouse Brokerage, Inc*., 575 F.3d 1376, 1382 (Fed. Cir. 2009) ("'Will' is a mandatory term, not a discretionary one"); *New England Tank Indus. of N.H., Inc. v. United States*, 861 F.2d 685, 694 (Fed. Cir. 1988) (distinguishing mandatory term "will" from discretionary term "should"). The Ninth Circuit recognizes that certain forest plan components may be planning guides but not mandatory standards. In *Lands Council v. McNair*, 629 F.3d 1070, 1078 (9th Cir. 2010), the Court accepted that forest plan language stating old-growth stands "should" be at least 25 acres in size functioned as "a guide for planning purposes, but does not prohibit counting stands less than 25-acres as old growth." *Id*. Similarly, in *Ecology Center v. Castaneda*, 574 F.3d 652, 660-61 (9th Cir. 2009), the Court deemed that the language of guidelines incorporated into a forest plan did not "create a mandatory standard." Instead, the guidelines were not enforceable under NFMA because they were cast in "suggestive" language using the word "should," and "merely recommended" a particular practice "when possible." *Id*. at 661 (internal quotation omitted).

In short, the Forest Service enjoys considerable deference in the implementation and application of forest plan guidelines, things that it "should" or "should not" do. As elsewhere, similarly in this plan revision affecting three large regional national forests, the Forest Service overreached. By consigning many significant aspects of wilderness and forest management to aspirational goals and guidelines, the agency has abdicated its basic responsibilities under NFMA and its 1982 planning rules. Moreover, it has not disclosed clearly the effects of this change (and, logically, it cannot disclose effects) when the range of potential concrete outcomes is so broad as to be effectively unknowable, violating NEPA.

Standards and guidelines are at the heart of a forest plan. They serve as the basis for future decisions. Maintaining wilderness values is a responsibility the agency has under the Wilderness Act and is not discretionary. Thus, it is clear the following changes must be incorporated into the selected alternative: (*italics* are used for additions. ~~Strikethroughs~~ are used to delete a word. Bulleted points are additional comments.)

First it is good to see these to following examples as Standards: MA 1A-1S Standard. With the exception of permitted livestock, animals other than pack stock and pets (see glossary) shall not be authorized or allowed in wilderness areas (separation between pack goats and bighorn sheep must be maintained) and: MA 1A-2S, Standard. Wheeled vehicles, such as wagons and game carts, shall not be authorized or allowed within wilderness areas; MA 1A-5S. Standard. Storing or abandoning personal property, equipment, and supplies for more than 72 hours in wilderness areas shall not be authorized; and: MA1B-1S Standard. Proposed uses that could compromise wilderness area eligibility prior to designation shall not be authorized. As noted in our prior DEIS comments, our organization fully supports these Standard provisions.

However, the following need to be changed and incorporated to make these both meaningful and enforceable:

MA 1A WIL-3: ~~Guideline~~. ***Standard***. New proposals for outfitter and guide special use permits or recreation event permits ~~should~~ ***shall*** be approved only when the special use or event is consistent with wilderness area desired conditions and a need is identified by a needs assessment and capacity analysis. It is dismaying to discover that this is only a standard for alternative C, merely a guideline for alternatives B, D, E, and F, and that ***there exists no corresponding standard or guideline for the selected alternative E-Modif*****ied**! This lack of responsible provision violates NEPA's reasonableness standards and would violate the NFMA. This must be corrected in a revised FEIS and ROD.

MA 1A-3G ~~Guideline~~. ***Standard***. Party sizes greater than 12 people and/or 18 head of stock ~~should~~ ***shall*** not be authorized or allowed within wilderness areas.

MA 1A 4G ~~Guideline~~. ***Standard***. The hitching or tethering of a horse or other saddle or pack animal ~~should~~ ***shall*** be not be authorized or allowed within 200 feet of lakes or within 100 feet of streams and posted wetlands in wilderness areas to maintain wilderness characteristics.

MA 1A-16S **Standard**. Hitching or tethering of horses or other saddle or pack animals to trees, except for loading or unloading, shall not be authorized at campsites within wilderness areas. *However, in the selected alternative this standard "applies only to the Wallowa-Whitman National Forest." Reasonable and accurate analysis can only conclude that such a provision is also warranted in all three of the Blue Mountain region forests. To comply with the requirements of both the NEPA and the NFMA, this ***standard must be extended to cover all three forests***.

MA1A-6G (Malheur NF) ~~Guideline~~. ***Standard*** - and repeated again in the FEIS as: MA1A-7G ~~Guideline~~. (Umatilla NF) ***Standard***. Camping and campfires ~~should~~ ***shall*** not be authorized or allowed within 200 feet of lakes, streams, or other camps within wilderness areas in order to maintain wilderness characteristics.

MA1A-9S applies to the Eagle Cap Wilderness in the Wallowa-Whitman N. F., where it takes the "Guideline" above (MA1A-6G) and applies it as a Standard for Eagle Cap only. It then breaks this same basic standard piecemeal as MA1A-10S a Standard for a series of specified lakes in the Wallowa-Whitman. Instead of such a mystifying piecemeal approach varying by National Forest despite similar ecological concerns, the agency must move towards the consistency NEPA requires, and adopt this provision as a ***Standard across all three National Forests***. As above, it defies reasonable common sense to not also apply this region-wide, and to be meaningful, as a Standard and not a mere guideline.

MA1A-17G ~~Guideline~~. ***Standard***. To maintain wilderness characteristics, all firelines ~~should~~ *shall* be restored by actions such as scattering slash piles along and onto firelines, knocking down or burning all slash piles greater than 18 inches tall, pulling back and covering all sod with slash, and placing boulders, logs, and slash on firelines to discourage use and camouflage entrance points. Additionally, all firelines that are within 100 feet of intercepting trails, roads, or stream crossings ~~should~~ ***shall*** be restored by cutting stumps flush and close to the ground (height of 4 to 5 inches), covering tops with a layer of soil (1 to 2 inches), and chopping and roughening the ends of logs and stumps.

MA 1A 18G (formerly in the DEIS: MA 1A WIL-FIRE-2): ~~Guideline~~. ***Standard***. Waterbars ~~should~~ ***shall*** be constructed on fireline slopes that exceed 10 percent in order to maintain wilderness characteristics.

MA 1A WIL-FIRE-3 ~~Guideline~~. ***Standard.*** Garbage and trash ~~should~~ ***shall*** be removed. Presented as a "Guideline" for alternatives B, C, D, and F; this guideline is not included in the selected alternative E-Modified, which simply states "These alternatives have no corresponding standard or guideline" – which is unconscionable – are we to assume that the agency will now allow trash to be dumped and left at the whims of anyone? As noted in our DEIS comments, this "guideline" must become a standard as noted above, and must be included in the final revised selected alternative.

MA 1A-19G ~~Guideline~~. ***Standard.*** Camps ~~should~~ ***shall*** be restored by replacing logs and rocks, recontouring terrain, scarifying soil, and scattering twigs, rocks, and dead branches to discourage use and camouflage entrance points to maintain wilderness characteristics.

MA 1A-20G ~~Guideline~~. ***Standard.*** Closed roads that were opened to provide access to wilderness areas ~~should~~ ***shall*** be closed after the use has concluded to maintain wilderness characteristics.

MA 1A-21G ~~Guideline~~. ***Standard***. Wilderness trails used as used as firelines ~~should~~ ***shall*** be returned to original condition after the use has concluded to maintain wilderness characteristics.

MA1B-1S ~~Guideline~~. ***Standard.*** Proposed uses that could compromise wilderness area eligibility prior to congressional designation ~~should~~ ***shall*** **not** be authorized.

MA1B-2G ~~Guideline~~ This guideline is antithetical to the provisions of the Wilderness Act and to both ecological science as well as environmental policy laws concerning management and other activities in potential wilderness as well as roadless areas. This must be thoroughly revised to its exact opposite and then adopted as a ***Standard***: Mechanized (bicycle) use and non-motorized travel ~~may occur~~ ***shall not be permitted*** on existing trails in recommended wilderness areas.

MA1B-3G ~~Guideline~~ This guideline as well is antithetical to the provisions of the Wilderness Act and to both ecological science as well as environmental policy laws concerning management and other activities in potential wilderness as well as roadless areas. This must be thoroughly revised to its exact opposite and then adopted as a ***Standard***: Motorized equipment including chain saws and trail machines ~~may~~ ***shall not be used for*** trail maintenance and reconstruction on existing trails within recommended wilderness areas.

MA1C-1G ~~Guideline~~ ***Standard***. Management activities ~~should~~ ***shall not*** reduce or impair the wilderness characteristics and qualities for which the area was designated.

Additionally, new standards and guidelines should be drafted:

- Standards MA1A-11S, MA1A-12S, MA1A-13S (actually it appears this is already adopted as the MA1A-5S Standard in the FEIS – applicable to all wilderness areas – so the inclusion of it here as applying only to Eagle Cap is both redundant and confusing at best), MA1A-14S, and MA1A-15S are all only applicable to the Eagle Cap Wilderness Area. These Standards are relevant to all wilderness areas and proposed wilderness as well. The revised FEIS and ROD must add these provisions to protect all of the region's wilderness and potential wilderness areas.
- Standards and guidelines for RWAs must be rewritten so that they serve as a link and clearly assist the agency in achieving legal mandates. In this case the management direction for the RWAs must be clearly linked to the requirement of protecting wilderness characteristics pursuant to the Wilderness Act of 1964. The standards and guidelines must be explicit and enforceable, and thus able to ensure that wilderness characteristics and values are retained and protected.
- The proposed standard for MA 1B must be rewritten so that it explicitly prohibits all existing and potential uses that are incompatible with wilderness and that could impair wilderness area eligibility. The standard as written in the FEIS is clearly insufficient to protect these areas. In addition to degrading wilderness conditions, allowing conflicting uses into RWAs prior to designation will result in greater complications with later designation processes. The Wilderness Act contains an unambiguous affirmative obligation to protect wilderness character. The standards and guideslines for RWAs and existing Wilderness areas must be revised to be fully consistent with this requirement.
- Requiring that the ecological role of fire within wilderness areas would be maintained as a natural process and naturally-ignited fires would be allowed to burn without suppression unless private lands adjacent to the wilderness are at risk, or for public health and safety reasons.

- Prohibiting the use of bulldozers, trucks, *chainsaws* or other motorized tools to put out fire within wilderness areas unless it is necessary to protect private lands or for public health and safety reasons. In such latter situations, the utilization of intrusive methods shall be limited to boundary areas of wilderness, and shall not be permitted within the interior of the wilderness itself.
- Requiring all visitors to pick up and pack out all litter and trash.
- When campsite condition surveys indicate a need for change in stock use policy the following actions shall be considered
    - Limit overnight camping to an appropriate number of nights for any one site.
    - Designate specific campsites for stock use, while proactively prohibiting such use where harms would incurr.
    - Limit the number of stock allowed when camping overnight.
    - Permit no overnight grazing of pack and saddle stock.
    - Prohibit use of stock where warranted.

Regulations implementing the NFMA state, "[p]lans guide all natural resource management activities and establish management standards and guidelines for the National Forest System. They determine resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management." 36 C.F.R. § 219.1(b) (1982). Standards and guidelines in forest plans must be "qualitative and quantitative." *Id*. at § 219.1(b)(12) (1982). Plans must establish "standards and requirements by which planning and management activities will be monitored and evaluated." *Id*. § 219.5(a)(7) (1982). Additionally, plans must define reasons for management practices chosen for each vegetation type and circumstance. *See id*. § 219.15 (1982). The Forest Service has a mandatory duty to ensure that "[f]ish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area." *Id*. § 219.19. A "viable" wildlife population is defined by the 1982 Planning Rule as one "which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area." *Id*. The standards and guidelines of the BMFPR FEIS are seriously flawed and incapable of meeting the stringent requirements of the NFMA. The FEIS and ROD must be withdrawn and the standards and guidelines revised as demonstrated above.

5. Failure To Adequately Consider A Reasonable Range Of Viable Alternatives Relevant To Protecting And Maintaining Wilderness Quality Roadless Area Lands

NEPA requires the Forest Service to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E). Regulations implementing the NEPA obligate the agency to "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." 40 C.F.R. § 1502.14(a). The alternatives considered are the "heart" of an environmental impact statement. 40

C.F.R. § 1502.14. Even as it considers and analyzes foreseeable impacts of the proposed action, the Forest Service must "[r]igorously explore and objectively evaluate all reasonable alternatives." *Id*. at § 1502.14(a); *see also* 36 C.F.R § 219.12(f) (1982). The EIS must present environmental impacts of the proposed action and reasonable alternatives "in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public." 40 C.F.R. § 1502.14. The NEPA process must "identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment." *Id*. at § 1500.2(f).

Additionally, regulations implementing the NFMA require the Forest Service to consider planning alternatives during the NEPA process that are "distributed between the minimum resource potential and the maximum resource potential to reflect . . . the full range of . . . environmental resource uses and values." 36 C.F.R. § 219.2(f)(1) (1982). The alternatives considered must "facilitate analysis of opportunity costs and of resource use and environmental trade-offs among alternatives." *Id*.

Standards of the APA control review of agency compliance with requirements of the NEPA and the NFMA. *Southeast Alaska Conservation Council v. Fed. Highway Admin*., 649 F.3d 1050, 1056 (9th Cir. 2011). An agency's decision will be set aside if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Review under the "arbitrary and capricious" standard is based on "a consideration of the relevant factors and whether there has been a clear error of judgment." *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971).

During the previous DEIS process, and prior to that throughout the prolonged process of the Blue Mountains Forest Plan Revision, our organization as well as other conservation groups supplied the Forest Service with specific written comment asking the agency to fully consider and compare impacts of an action alternative that would increase protection of roadless areas and potential wilderness lands, including dependent species viability, in response to cumulative impacts and fragmentation of current and past agency management, and the realities of exponentially manifesting climate change.

The Forest Plan Revision process requires an ecosystem approach, an opportunity for review and long-range vision concerning roadless areas, species of concern and listed species and the rampant habitat degradation that has, and continues to occur throughout the Blue Mountains forests. The planning process reasserts and unparalleled opportunity to develop scientifically sound, far seeing alternatives that are capable of maintaining rare remaining wilderness quality habitat essential to aid in the recovery of at-risk terrestrial, avian and aquatic species and their diverse and often overlapping habitats. Although federal land management cannot arrest all sources of ecological degradation and resultant listed species and species of concern decline, the Forest Service can implement meaningful and enforceable standards and guidelines to maintain and restore the ecological integrity of wilderness quality roadless area habitat. This approach is both prudent and necessary given the current perilous state of many listed species populations and the often-difficult task of recovering population trends and protecting their remaining habitats from further harms. Instead of meaningfully addressing this issue, instead the agency cites their "alternative P" as one it chose not to develop ("Wilderness Area Emphasis"). In the FEIS the agency repeatedly obfuscates and misrepresents the plethora of scientific research and consensus concerning Climate Change – and the consequent imperative of protecting wilderness quality unroaded areas where ecological integrity and natural resilience are in more prevalent evidence. While the agency attempted to create a spread of different options in its developed alternatives, these generally fail to represent a reasonable range of full conservation opportunities and are largely inconsistent in their contrived parameters. Instead the agency cites alternative P regarding protecting all roadless areas, dismissing this by citing the no-longer-effective FSH 1909.12 70 from 2007, claiming:

> Many of these areas do not meet the Forest Service Handbook (FSH 1909.12 Chapter 70) (2007) criteria for inclusion in the inventory of areas with wilderness area potential. Alternative C, which would allocate more than 500,000 acres to preliminary administratively recommended wilderness areas (Management Area 1B), responds to the request to emphasize wilderness areas.

As shown herein above, the 2007 FSH was employed using a section of it that no longer exists, and the analysis in the FEIS was required to have been updated utilizing the 2015 FSH. Additionally, the cited "alternative C" would at best only protect less than a third of wilderness quality roadless area lands, leaving well over a million acres of unroaded lands open to management degradation and fragmentation. By ignoring climate change issues and scientific recommendations on the importance of roadless wilderness quality lands, the agency has abdicated the requirements of the NEPA concerning sound science, expert advice, cumulative impacts, fragmentation, and imperiled species of concern and listed species. The agency in so doing would further violate the requirements of the NFMA with the resultant degradation of essential ecologically more intact habitats for these many species. This is supposed to be a long-term, long range planning document. It is inexcusable that the agency has ignored these significant scientifically sound realities, producing a planning document in this era of significant manifesting climate change harms that fails to have any meaningful awareness or effective action concerning this. The agency has not responsibly nor meaningfully considered such an alternative, and as a result the range of alternatives presented in the BMFPR FEIS is unreasonably narrow. In taking a NEPA requisite 'hard look' at the FEIS it is clear that its proposed standards and guidelines and best management practices, even if these were to be fully funded, implemented and monitored, are clearly inadequate to begin to meet statutory and regulatory requirements to provide for viable fish and wildlife populations and their habitats.

Additionally, the Forest Service presented another contrived alternative in the FEIS that it chose not to develop – alternative I – no commercial timber harvest. The FEIS in dismissing this alternative from being developed states:

> "This alternative was considered but not studied in detail because it would not meet the legal requirements of the Multiple Use Sustained Yield Act and the National Forest Management Act which allow for commercial harvest of timber to provide for multiple uses and benefits of the national forests. All alternatives analyzed in detail include management areas where there would be no commercial timber harvest, such as wilderness areas, preliminary administratively recommended wilderness areas, and other special areas. Alternative C, which projects a relatively low amount of commercial harvest, addresses these concerns within the constraints of the Forest Service's mandate of multiple use management."

FEIS Vol. 1 at 45.

If the agency had reasonably approached these above issues in their EIS analysis, they would have been able to develop a mixed alternative that incorporates the science regarding roadless, wilderness, species of concern and listed species, and manifesting climate change. Such a scientifically based, "hard look" NEPA analysis plan could not shirk its duty to proactively protect wilderness quality lands wherever these may yet exist across the forest, and to strategically limit – albeit not exclude entirely – logging extraction activities to areas where they would not further degrade or fragment the forest ecosystem. Instead the agency has contrived "either or" alternatives that serve little practical purpose other than pretense. In this FEIS, the Forest Service set up a series of 'alternative' straw men, and knocked these down claiming that they are contrary to the statutes governing national forest management because it excludes multiple uses. Yet these eliminated alternatives fail to meaningfully or reasonably address the science-based conservation values they claim to represent.

During the NEPA comment process for this EIS, our organization and others provided the agency with a significant body of scientifically based information concerning the need to develop a reasonable range of alternatives. Instead, the agency piecemealed this information, chopped and diced out of context, the so-called conservation alternatives from the developed alternative C to the dismissed alternatives I and P (among others) more aptly resemble a dysfunctional Frankenstein monstrosity than the scientifically sound management alternatives we so clearly advocated throughout this NEPA process. The agency many not create contrived pretentious "alternatives" so as to shirk its responsibility to develop a reasonable range of science-based management alternatives. Indeed, it is clear that an expansion on alternative C, incorporating the reasonable portions of alternatives I, P, and others as relevant to climate change and proactively protecting ecological integrity, while recovering native species at risk, should have been developed as required by the NEPA. The failure of the agency to take a requisite "hard look", to base its alternatives on the available range of applicable science, and to provide for the long-term vision necessary in a major three-forest region-wide planning document is inexcusable, legally, scientifically, ethically. If an alternative meets the purpose and need then it is reasonable, and it must be considered in an environmental impact statement. *Native Ecosystems Council*, 428 F.3d at 1247- 48 ("In judging whether the Forest Service considered appropriate and reasonable alternatives, [the] focus [is] on the stated purpose"); *also see* 40 C.F.R. § 1502.14(a) ("Rigorously explore and objectively evaluate all reasonable alternatives..."). The agency's misuse of contrived 'alternatives,' is nothing more than a shallow attempt to evade developing a meaningful, scientifically sound alternative. As such, the FEIS's failure to develop a meaningful range of reasonable alternatives and excluding these from detailed analysis consideration is arbitrary and capricious, and violates the NEPA, the NFMA and the APA.

Proposed Solution: Withdraw the ROD and revise the EIS so that it includes detailed study of reasonable action alternatives that incorporate the sound science of climate change, ecological integrity, and at-risk species relevant to the Blue Mountains Forest ecosystems.

6. The FEIS and ROD Would Significantly Harm Roadless Areas Not Recommended as Wilderness

In the FEIS, the Forest Service has under-designated the number of acres that must be included in Back-County designations. All of the areas that meet the criteria as roadless areas - that are not recommended for wilderness designation – must be designated as backcountry. Previously, after considerable effort and scrupulous review, conservationist organizations provided the Forest Service with a comprehensive inventory of Blue Mountains region roadless areas. However the Forest Service, in employing outdated MVUM maps and eliminating areas of less than 5000 acres, has egregiously skewed roadless area identification, consequently failing to acknowledge the roadless area conditions of many areas. The Forest Service must revise its inaccurate roster of roadless areas to include all places that meet roadless area criteria - as noted in the considerable inventory of roadless areas provided the agency by conservationists. The agency's current diminished list of roadless areas fails to meet the requirements of the NEPA for accurate site-specific conditions and analysis.

We also object to the designations given to areas identified as roadless. Of the areas the Forest Service has identified for backcountry designations, the LRMP ultimately designates 486,600 acres as motorized backcountry and only 128,800 acres as nonmotorized backcountry. On the Malheur, only 47,200 acres are designated as backcountry nonmotorized, whereas 1.5 million acres will be available for both winter and summer motorized vehicle use. FEIS at 48. This is a gross disparity and simply does not provide for the solitude and nonmotorized values that users of the forest are seeking, not to mention habitat security for key species on the forest, watershed protection and safety. The designation of this many acres as motorized will lead to an inevitable enforcement and safety issue for the forests, especially if there is a lack of adequate funding for travel management planning and sufficient law enforcement personnel to prevent even-more user-created trails and user conflict than currently exists. In this significant growing issue, the FEIS fails to provide meaningful analysis as well as planning actions that can effectively address this serious problem. As a planning document, expecting to direct management of the region's three national forests for the foreseeable future, the FEIS fails to evidence the 'hard look' and expert advice requirements of the NEPA. Degradation of these public lands forests by off road vehicle intrusions into natural ecological areas, is already rampant. Failing to curtail these intrusions to the extent needed to protect environmental resources fails to meet the NEPA intent of effective long-term forest management planning. The implementation of such would result in increased ecologically severe degradation that will violate the NFMA as well.

A substantial number of the unroaded areas designated as motorized backcountry are places recommended for wilderness area designations by our organization, other conservation groups, and many members of the public. Instead of designating these areas as RWA, the LRMPs will allow motorized recreation in these areas, which will have inevitable irreparable impacts on the backcountry and wilderness values present in the areas. In particular, on the Malheur, the motorized designation for Murderer's Creek (Dry Cabin) is both extremely disturbing and inconsistent with the recommendations of science for such an ecologically important area. One of the best habitats for elk and other wildlife in the region, it is undeniable that this area would greatly benefit from prohibiting motorized disturbance. As the FEIS itself acknowledges, wilderness areas provide the most habitat security for elk. Yet, in failing to accurately disclose and address the ecological conditions of this important area, and responsibly designate the Dry Cabin area as wilderness - or at a minimum as nonmotorized backcountry - the FEIS and ROD would allow motorized recreation which will severely degrade the habitat values throughout the area, both with increasing disturbance to wildlife, forest habitat, soils, and aquatic systems as well as the greater extent of noise intrusion across the area. In this, the Forest Service failed to adequately analyze the direct and cumulative effects of how designated motorized areas adjacent to wilderness or RWA will affect wilderness character, and will cause enforcement and conflict issues.

These above examples, in addition to the many others addressed throughout this Objection, further demonstrate the egregious extent Forest Service has failed to adequately examine the direct effects, indirect effects, and cumulative impacts of this Forest Plan Revision. The FEIS and ROD would place IRAs and other roadless lands in zones where development is allowed and where degradation would be ongoing. As a result many roadless areas would lose their wilderness character over the life of the plan. The FEIS violates FSH 1909.12 by failing to "Include site specific statements of the environmental consequences that a non-wilderness designation would have on…roadless area(s)." Furthermore, the plan fails to "Discuss mitigation measures to avoid or minimize the impact or loss of wilderness characteristics." The FSH at 1909.12-92-1, 4.19(c)(5) states that a land and resource management plan must: "describe the potential environmental consequences of a wilderness and a nonwilderness recommendation." At FSH 1909.12-92-1, 4.19(c)(5)(b) the Forest Service is required to: Discuss the impact on the roadless area of a wilderness designation and the impact of each nonwilderness prescription. Show the social and economic effects in each case. Include mitigation, if any, for loss of wilderness characteristics and the effects on plant and animal communities. The FEIS fails to take the requisite 'hard look' at these realities, and offer this information in a meaningful and comprehensive way. It is not enough to make "conclusory" or "perfunctory references" to cumulative impacts or to continue to use the same boilerplate language throughout the FEIS. *Natural Resources Defense Council v. Hodel*, 865 F.2d 288, 298-99 (D.C. Cir. 1988). Cumulative effects analysis requires "some quantified or detailed information. . ." *Neighbors of Cuddy Mountain v.U.S.F.S.*, 137 F.3d 1372, 1379 (9th Cir. 1998). "General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Id*. at 1380.

Failing the NEPA, the FEIS fails to accurately and adequately disclose and address the impacts the preferred alternative and the other alternatives would have on the natural integrity, apparent naturalness, remoteness, solitude, special features, species of concern and listed wildlife species, salmonid aquatic systems, manageability, logical boundaries, and special places or values in the Blue Mountains' IRAs and other roadless areas. The effect of the alternatives on the wild character of roadless areas throughout the region's forests was improperly assessed in the FEIS; as such neither this EIS nor the ROD satisfies the detailed analysis requirements clearly set forth in 36 CFR 219.17.

Proposed solution: Withdraw the FEIS and ROD, revise the analysis to accurately incorporate the recommendations of ecological science pertaining to wilderness quality areas and the synergistic impacts of growing climate change and human population and societal trends over the foreseeable future. This can best be done by designating existent unroaded areas as potential wilderness areas, and adjoining areas as nonmotorized back country, with particular emphasis on protecting areas that provide important habitat security, include intact stream systems and aquatic habitat, provide significant solitude and nonmotorized recreation opportunities, and help reduce forest ecosystem fragmentation. The FEIS and ROD must be withdrawn and revised to meet the requirements of the NEPA and NFMA, and provide the long-range, scientifically sound vision requisite in in meaningfully addressing the challenges of the present and providing for the natural heritage of future generations.

7. Failure To Adequately Consider A Reasonable Range Of Viable Alternatives Relevant To Protecting And Maintaining Wilderness Quality Roadless Area Lands From The Synergistic Impacts Of Livestock Grazing And Climate Change

The FEIS fails to accurately address the full impacts of livestock grazing on wilderness quality roadless areas, especially given the synergistic and cumulative impacts of grazing with ever-more emergent climate change realities. The agency's estimates of range capability fail to account for synergistic effects of livestock grazing and climate change on soil, water, vegetation and fire regime (Beschta et al. 2012). It is unlikely that rangelands in the planning area ever will return to "historical norms" that supported forage production capacity over the past century. Scientific research addressing regional uncertainties in model projections of hydroclimate change, and the continuation of natural climate variability on all timescales, point to the probability that much of western North America will be drier in the current century than in the one just past. Skillful prediction of the magnitude and timing of this drying will require prediction of the rate of anthropogenic change and prediction of the evolving natural variability for which currently there is scant evidence of any predictability beyond the interannual timescale. Another likely outcome is a continuing decline in winter snowpack and earlier onset of snow melt that will add to the stress on regional water resources. Seager and Vecchi (2010: 21282). Historically, "interglacial climates in the southwestern US can experience prolonged periods of aridity, lasting centuries to millennia, with profound effects on water availability and ecosystem composition. The risk of prolonged aridity is likely to be heightened by anthropogenic forcing" (Fawcett et al. 2011: 520). It is predicted that much of eastern Oregon will more and more resemble the climate conditions found throughout the southwestern US, as climate chane manifests for significantly over the coming decades. Add to this the already significant extent in regional fires and fire severity, it is clear the agency needs to take a more thorough "hard look" at the science pertaining to climate change in the Blue Mountains region, as well as the ongoing impacts of livestock grazing. The Forest Service does not meaningfully address the realities of climate change and wilderness quality lands in the FEIS, even though it was repeatedly cited by the commenting public, especially in conservation comments, and as such is readily available in the planning record. The Forest Service violated the NEPA, the NFMA and the APA with its clearly outdated, arbitrary and capricious assumptions of range capability and suitability as pertains to wilderness quality roadless lands throughout the region.

Proposed Solution: Given the extensive non-compliance with the clear requirements of the NEPA and the NFMA, the agency must withdraw the FEIS and ROD and conduct a Supplemental EIS process that conforms to environmental policy laws and directives; that relies on credible scientific research; that protects all rare remaining ecologically more intact areas including roadless and other relevant areas as potential wilderness and/or

other appropriate protective designations; and that embodies the essential long-term vision and scientifically-sound management actions necessary in a forest plan to begin to effectively address the ecological realities of this emergent climate change era.

FIRE/FOREST ECOLOGY ASSUMPTIONS

I. NEPA & NFMA Violations

The following pertains to the Final Environmental Impact Statement of the Proposed Revised Land Management Plans for the Umatilla, Malheur, and Wallowa-Whitman National Forests ("FEIS"). Our previous DEIS comments, and this current Objection to the FEIS and ROD, highlight crucial shortcomings and omissions from the FEIS in analyzing the environmental impacts of alternatives. As clearly demonstrated herein, the FEIS and ROD are in significant violation of the planning and disclosure requirements contained within the National Environmental Policy Act (NEPA) and National Forest Management Act (NFMA). This Objection also provides recommendations for additional conceptual frameworks to responsibly revise, develop and assess management plans.

Specifically, the FEIS fails to meet NEPA and NFMA requirements to:

- adequately analyze the range of viable management alternatives and to adequately assess the foreseeable environmental impacts associated with each:
- to clearly develop management goals and desired conditions associated with each management alternative in accordance with best available science;
- to provide for adequate and necessary adaptive management programs within each management alternative in order to monitor the implementation of management actions and their environmental impacts, and to modify management actions in order achieve management goals and desired conditions;
- to consider the impacts of climate change and the social and economic drivers that will compound the environmental impacts of management alternatives over the duration of the planning period and in the foreseeable future;
- to distinguish between management goals that seek to restore ecosystems' characteristics and functions within their historic range of variation versus to prepare ecosystems for departure from historic range of variation due to climate change impacts and external drivers;
- to use best available science in the construction of historic range of variation analyses for use as benchmark metrics in the development of goals, desired conditions, and management activities;
- to adequately analyze whether the restoration of Blue Mountains' ecosystems to their historic range of variation is a viable management goal, and the degree to which restoration is feasible across different regions and within different ecosystems;
- to accurately disclose, meaningfully incorporate, and effectively address he recommendations of credible science concerning climate change, and the paramount importance of existent more-ecologically intact roadless, wilderness areas, and potential wilderness areas as bastions of ecosystem resilience so essential in this era;
- to assess the foreseeable environmental impact of the management activities prescribed within the FEIS;
- and to provide necessary guidelines, standards, monitoring regimes, and adaptive management programs to ensure that implementation of management activities will achieve management goals and prevent undue adverse ecological impacts.

II. Developing management goals & desired conditions:

In exploring the range of potential management alternatives and their associated environmental, social, and economic impacts in the Blue Mountains, the FEIS fails to adequately develop management goals and desired conditions that sufficiently and adequately explore the range of scientifically-sound management strategies. Furthermore, the FEIS fails to provide necessary clarification of goals and desired conditions to guide the development and implementation of management prescriptions, and therefore diminishes the possibility for meaningful analysis of the environmental impacts associated with management alternatives.

Firstly, the stated desired conditions are uniform for all alternatives, representing a failure to explore the range of possible future conditions that may be achieved. Insofar as future ecological conditions reflect the cumulative effects of previous management and land-use patterns, current and future management and land-use patterns, and uncertain impacts from future climates, disturbance events, surrounding land-use patterns, economic drivers, and social values, the FEIS would best adhere to scientific admonitions (concerning the uncertain variables of ongoing climate change) to explore multiple potential steady states for Blue Mountains forests under a range of different desired conditions. Such an analysis is necessary in order to distinguish the anthropogenic impacts of the proposed management alternatives from external drivers, by comparing the future ecological condition of Blue Mountains forests as would likely be shaped by different sets of desired conditions and the management goals and activities they would precipitate. This analysis would allow for a more accurate understanding of the environmental impacts of management alternatives by providing clarity for differentiating between anthropogenic and non-anthropogenic drivers of ecosystem conditions and processes, and exploring the interactions between the two that would occur under different alternatives. The use of a uniform set of desired conditions for all of the alternatives analyzed constitutes a failure to perform due diligence in taking sufficient steps to understand the ecological impacts of management alternatives.

Secondly, the development and analysis of desired conditions and management goals reflects an insufficient analysis of and preparation for climate change. Scientific research resoundingly emphasizes that it is ecological resilience, much more than any preconceived "desired conditions," that is essential to maintain, restore, and protect in this emergent era of climate change uncertainties.

Specifically for terrestrial vegetation and wildland fire, the FEIS analyzes the future ecological conditions and cumulative effects likely to occur under different alternatives at the 20- and 50-year mark. However, it is clear that landscape-level climatic forcing occurs at the decadal- to century-scale. Preparing for the long-term impacts of climate change on Blue Mountains forests necessarily requires an analysis of ecological impacts across comparable timeframes. Using a 50-year window to assess the cumulative effects of past and current management activities on future landscape conditions provides too narrow of an analytic perspective and fails to consider the long-term impacts of management activities on changing ecosystems and sociopolitical conditions. The management actions taken today set the stage for future ecosystem conditions and define how we are responding to and preparing for climate change. Therefore, it is imperative that the FEIS considers the ecological impacts of management alternatives at the 100- to 500-year scale, incorporating data from models of climate change scenarios on scales stretching beyond the immediate future. While extending the analytic window further into the future decreases the certainty with which we can make predications and judge the impacts of management actions, many of the environmental impacts from today's management planning will take upwards of 50 years to be fully realized across the landscape. Simultaneously, global and regional climatic changes will continue to alter ecological systems well beyond the 50-year mark. The ecologically significant interactions between long-term impacts from management and from climate change requires careful analysis of the ecological effects arising from the implementation of different management alternatives. The abbreviated analysis of management impacts on forested vegetation and wildfire to a timeline incommensurate with the scale of climate change, which the FEIS allegedly aims to mitigate through the proposed management plan, represents a lack of scientific integrity to adequately assess the ecological impacts of management alternatives occurring in concert with climate change. Limiting analysis focus to a myopically stilted time range is in contravention to scientific research conclusions concerning management activities and climate change potentialities. However, science has been clear on one significant component of effectively addressing climate change; while management activities – including those with well-meaning objectives – often have proven detrimental over time, scientific recommendations on maintaining and protecting locations with more ecological integrity, and hence greater resilience in the face of climate change, cannot be over-emphasized. Such locations include existent old growth forests, roadless areas, wilderness and potential wilderness areas, and the ecosystem connectivity between these often-disparate areas. By protecting all such locations, while providing for connectivity, the agency can best address the uncertainties of climate change. However, such is not the course this scientifically unfounded and legally deficient FEIS and ROD have taken.

III. Clarifying between restoration to HRV versus management for natural resilience for divergently novel ecosystem conditions and dynamics

In addition to poorly developing the range of desired conditions expressed by the explored management alternatives, the FEIS fails to clarify the intent of the expressed desired conditions. Frequently, the FEIS states that increasing forest resiliency in the face of climate change and uncertain external drivers is a primary goal, best accomplished through restoration of Blue Mountains forests to pre-settlement condition within the historic range of variation. However, the FEIS does not acknowledge the significant departures in climate, land-use patterns, and sociopolitical systems that have occurred between presettlement[10] conditions and current and

[10] "Presettlement" refers to pre-European invasion and settlement, and does not refer – as it sounds it would – to the far removed era before established human presence occurred in this region, many thousands to tens of thousands of years ago. The use of this flawed term creates an illusion that humans somehow were not present in substantial numbers or did not have a major effect upon the region's ecosystems, when in truth, humans were a significant factor in the inherent resiliency of the region's ecosystems, and lived within these systems as part of, and in greater harmony with nature. This imprecise term is used throughout the FEIS, and is used herein

future conditions. Foundational hydrological patterns have been altered beyond ecosystem recovery, yet these are an essential component of "restoring HRV." For example, the combination of private and public land use and ownership patterns, the extent of road systems, the cumulative impacts of water diversions, prior and current logging, livestock grazing, and diminished wildlife presence (including once abundant beavers and the hydrological systems engineered by this species) – all of these combine to render the stated objectives of restoring HRV an infeasible task – even before growing climate change conditions have begun to be considered. The FEIS, while it cites various climate change studies, fails to meaningfully incorporate or address the synergistic realities of these inextricably interrelated factors in the development of its management objectives for this forest plan.

In the many instances where these non-ecological departures preclude or significantly hinder the potential to achieve presettlement conditions, or the inherent resiliency conferred by emulating presettlement conditions under novel climatic change scenarios and sociopolitical conditions, the FEIS must clarify whether the desired conditions primarily seek to re-establish presettlement landscape conditions through restoration activities or seek to pre-empt future climate changes through assisted evolution of landscapes towards non-presettlement conditions. Management goals and objectives must be clarified to distinguish between actions taken to restore historic landscape conditions, and actions taken to create novel ecosystem conditions in preparation for anticipated future climatic conditions and disturbance impacts.

The ecological appropriateness and effectiveness of proposed management activities ultimately must be analyzed in regards to a clearly defined set of desired conditions, according to what objectives are being pursued. There needs to be more nuance in differentiating between management actions aiming to restore pre-settlement landscape characteristics (for which there are verifiable components of composition and structure), and treatments aiming to increase forest resiliency against projected future conditions, which may represent a departure from historic stand structures and species assemblages on a landscape level. In both of these objectives, the agency largely fails to address relevant science accurately. Short of removing roads, and allowing natural processes to manifest and cycle, the majority of credible science recommends strongly against utilizing logging or other intrusive and inherently degrading management actions to "restore" forest ecosystems to "presettlement conditions." Generally, such research concludes that more harm than benefit results from such actions, further increasing risk of severe fires, degrading forest soils, disturbing natural habitat, and disrupting ongoing natural processes of resilience and recovery. In the latter, management actions purporting to 'increase forest resiliency' while diverging from an area's natural range of variability represent a dangerous venture into anthropocentric management presumptions that have little evidence of validity or scientific support. Here, the analysis within the FEIS falls far short of NEPA's "hard look," expert advice, and scientific accuracy and integrity. Further, the FEIS, in its failing to adequately differentiate these two divergent management paths, obfuscates the full cumulative impact potential of its management directives, many of which represent irretrievable actions with

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for simplicity of addressing the many deficiencies of the FEIS and ROD, however, it would be far better if this inaccurate term were corrected in the Supplemental EIS necessary for this revision process to legally proceed.

irreparable impacts. These analysis deficiencies and inaccuracies must be corrected in a revised Supplemental FEIS and ROD.

The FEIS assumes that restoring landscape conditions for vegetative composition, structural stage distribution, and stand structure and density distributions will result in a restoration of the vital processes that maintain ecosystem health and increase landscape resiliency following disturbance events. This assumption is the basis for the strategy to increase forest resiliency through restoration to presettlement condition: "The underlying assumption is that these forest ecosystems will be sustainable and resilient to natural disturbances and climate change if they exist in a condition close to that under which they evolved," (FEIS v2 pg109)." As necessarily expressed by the desired conditions provided in the FEIS, and management activities prescribed and analyzed, USFS land managers intend to focus restoration efforts on static forest conditions and stages, to the exclusion of dynamic ecosystem processes and functions. In this implicit management philosophy, process and function (that is, resiliency) follows pattern and form (forest structure and composition): by re-creating the species compositions, successional stage distributions, stand structures and densities of presettlement landscapes across forest types, the resiliency that presettlement landscapes exhibited in response to disturbances of varying types, severities, and frequencies will be restored. As noted previously, throughout much of the region's forests, many baseline conditions have been changed over the previous 150+ years so much so that achieving "presettlement conditions" is an improbable goal, and definitely is one that cannot be accomplished by the same types of extraction management activities that have degraded the once natural forests so severely. It is further ironic, that this same FEIS, while proposing detrimental logging impacts under the pretense of restoration objectives, also would open up the vast majority of the region's existent unroaded areas – where 'presettlement conditions' are largely still prevalent – to further degradation by logging and other management harms. In this, the purported goals of the FEIS are both inconsistent, unsupported by relevant science, and largely unachievable by the management means emphasized in the FEIS that the ROD would implement. At a minimum, given the acknowledged scientific support and importance of the innate resilience inherent in locations with 'presettlement conditions,' it would preclude the agency to first assure the protection of all such existent areas first and foremost, and to provide for the ongoing natural cycles of resilience and restoration in other locations, as nature is the only scientifically proven authority on actually achieving the type of conditions the agency states it seeks to restore.

However, the FEIS neglects to adequately consider the significance of landscape ecology on patterns in shaping processes. The FEIS states: "maintaining and/or restoring forest conditions similar to that which occurred and evolved prior to interruption of the historical fire regime (the historical range of variability), ecosystems would be better able to absorb disturbances while retaining the same basic structure and ways of functioning, and they would have a greater capacity to adapt to stress and change in the future," (FEIS v2 pg126). The FEIS then provides desired conditions for percent distributions of stand structures and forested species compositions across PVGs, developed from HRV modeling, with the assumption that restoration of presettlement forests' resiliency will be achieved through managing forests to meet quantitative goals for stand structures and species compositions. As enumerated in the following section, the HRV model fails to provide necessary information about landscape ecology and the spatial and temporal characteristics of presettlement forests, characteristics that are crucial to landscape functioning by providing the organizing framework in which static elements such as stand structures and species assemblages dynamically interact to produce robust and resilient ecosystems. The quantitative percentages of stand structures, species compositions, and densities provided by the HRV model do not accurately portray the presettlement landscape in that these quantitative measures fail to describe patch sizes and shapes, edge ratios, topographic patterns, alternations in hydrological conditions (which play a significant role in fire cycles and patterns), regional variations, or variance and heterogeneity, all of which are commonly accepted metrics used in the field of landscape ecology, and all of which carry enormous ecological importance to determining the functioning of ecosystems, especially disturbance-prone ecosystems such as the fire-adapted forests of the Blue Mountains (Camp et al. 1996, Agee 1998). Not only does the restoration philosophy expressed in the FEIS of process following pattern and of resiliency being achieved through restoration of forest conditions fail to recognize the multidirectional relationship between the two, but the desired conditions used within the FEIS fail to provide critical information that is absolutely necessary to characterize presettlement forest conditions with the fidelity required to inform and guide restoration activities that seek to emulate the characteristics of presettlement landscapes. Merely managing forests to meet a quantitative goal for specific structures and densities, stratified only by PVGs and national forests, will utterly fail to achieve the resiliency of presettlement forests by neglecting to provide for and maintain the landscape characteristics of those specific structures and densities.

Among the many factors absent in the FEIS HRV formulations are the complexities inherent in an area's natural range of variability. It's as if the Forest Service cannot see the forest ecosystem for the trees (or in this case more correctly its ecologically unfounded desire for the 'timber' of felled forests). Resilience inherent in 'presettlement forests' was comprised of many diverse parts not accurately considered in this FEIS. Among these are forest soils which were once thousands of years of felled trees, decomposing vegetation, ash and carbon from recurrent fire cycles, minerals and fungal systems, and hydrological capabilities and patterns which were once much more flowing and rich with biodiversity than most of the region's soils are today. Yet these foundational components of resilience would be devastated by the types of active management the agency would unleash with this FEIS, with widespread harms brought by heavy logging machinery, removing numerous trees from extensive areas rather than letting them cycle through their lives and replenish the soils in their eventual natural demise – returning to the soil ecosystem the minerals, nutrients, and carbons accumulated during their life cycle. The FEIS is inconsistent with these and other obvious, and scientifically acknowledged important components of any attempt to achieve resiliency.

Furthermore, the FEIS fails to account for the multidirectional relationship between pattern and process in landscape functioning, and neglects to adequately analyze the environmental effects restoring HRV patterns without ensuring the restoration of HRV processes. Recognizing the importance of native ecosystem processes, most significantly disturbance regimes and their impact on perpetuating dynamic successional patterns across the landscape, restoration strategies must not limit their focus to static distributions of species compositions, age-class distributions, or stand structures and densities. In the Blue Mountains especially, wildland fire disturbance regimes played a foundational role in shaping the function, structure, and composition of presettlement landscapes – albeit with significant differences in severities, extents, and return intervals between the Medieval Warming Period and the Little Ice

Age (McKenzie et al. 2004). As the FEIS acknowledges, "fire is vital to the health, functioning, and sustainability of the ecosystem. Fire contributes to multiple ecological functions and processes, with effects varying depending on fire intensity, severity, and frequency," (FEIS v2 pg208). The effects of wildland fire on ecosystem conditions are highly variable, arising from the severity, extent, seasonality, and return interval of fire regimes. Importantly, fire regimes shaped presettlement ecosystems not only at the average values of their severity, extent, and frequency, but across the entire range of these measures (Agee 1998, Swetnam et al. 1999, Agee 2002). Furthermore, fire regimes interact with regional climatic gradients, macro- and micro-topographic features, and landscape patches (Camp et al. 1996, Heyerdahl et al. 2001, Heyerdahl et al. 2002). The product of these complex variables interacting within fire regimes was a heterogeneous landscape mosaic of diverse age classes, structures, densities, and species compositions within patches of varying size, form, distribution, and temporality (Agee 1998, Spies et al. 2006). At the landscape level, wildland fire created a complex and patchy terrain of "meta old-growth," of dynamic and shifting patterns of "landscapes within landscapes" that upheld the continued functioning and patterning of presettlement ecosystems, and was in turn shaped by that functioning and patterning (Camp et al. 1996, Spies et al. 2006, Hessburg et al. 2015). The integrity of intact ecosystem processes, most significantly wildland fire regimes, but also significant and largely unaddressed in the specificity deserved – hydrological patterns existent in pre-European settlement times as comparative to those of today; together, these provided the groundwork for presettlement ecosystems to respond to disturbance events while maintaining the same basic form and function, thereby characterizing the inherent resiliency that current management seeks to restore.

This understanding of the relationship between native fire regimes and the ecological functions and states they produce and are produced by necessitates a re-examination of the "pattern vs. process" paradigm as understood within the FEIS. The FEIS states that "maintaining and/or restoring forest conditions similar to that which occurred and evolved prior to interruption of the historical fire regime (the historical range of variability), ecosystems would be better able to absorb disturbances while retaining the same basic structure and ways of functioning, and they would have a greater capacity to adapt to stress and change in the future," (FEIS v2 pg126). As indicated by this restoration strategy, USFS land managers in the Blue Mountains are operating from the assumption that re-creating the quantitative distribution of presettlement age classes, species distributions, stand structures and densities within the Blue Mountains will qualitatively result in a restoration of presettlement landscape processes and functions. Such an assumption is again visible in that desired conditions provide quantitative objectives for forest structural stages, forest species composition, and stand densities, by potential vegetation group for each of the three national forests. For fire regimes, the FEIS provides quantitative objectives for reducing vegetation departure index scores by potential vegetation group for each of the three national forests, an indicator that characterizes vegetative conditions more than in does fire regimes. These management objectives vary quantitatively by alternative, but the indicators used remain the same for all alternatives. These indicators depict discrete measures that reflect static states of vegetative conditions, stratified only by potential vegetation group and by national forest. None of the provided indicators or management goals seek to analyze ecosystem processes associated with disturbance events and successional patterns, reflecting a clear bias towards tailoring management towards easily quantified and contained ecosystem patterns, and neglecting to consider the ecologically-significant but fluid (and therefore less easily quantified) ecosystem processes. While discrete structural stages may be easier to quantify and use as a benchmark to guide management activities and assess efficacy, basing management plans on maintaining specific stages that are highly dynamic may prove more time- and resource-intensive and less effective that managing a landscape to maintain the ecological processes that create and transform those structural stages. Managing for processes aligned with historical conditions will ensure that epiphenomenal impacts associated with ecosystem processes are not lost, and will allow for a more robust landscape that can respond to unprecedented conditions anticipated under climatic changes (Noss et al. 2006a, Hessburg et al. 2007).

Simply put, the FEIS attempts to define "presettlement" resiliency by quantifying the varied components of ecosystem structure, such as how many trees per acre for different eco-zones, and other vegetative quantification. This narrow-sighted HRV process fails at the outset, as it does not acknowledge the complexity of all the numerous varied components that together, in their interwoven and fluctuating processes and cycles, create the ever-changing ranges that bring resilience, and embrace natural disturbance as essential parts of that resilience. Further, the agency has become fixated at elevating certain parts of ongoing ecological processes, taking these alone out of context with many other factors. In particular, fire cycles, frequencies, and intensities have somehow become dominant in the agency's fixation, while hydrological and climatic patterns, changes over time in indigenous settlement and cultural patterns, the richness of soil communities, the full range of native species biodiversity, all these factors carry the same weight and measure as fire – indeed significantly influence and define the parameters of fire cycles – yet the agency's formulaic HRV quotients has not even begun to address this reality. In other words, the agency's approach is as if someone went to the Notre Dame Cathedral and merely identified and quantified each of its major structural components, then dumped these varied components on the ground piecemeal, and called it a replica of the Cathedral. Disparate parts do not the ecosystem make. Rather it is the ongoing interrelations of ecological processes, cycles, and fluctuations that both define and create resilience. Such cannot be done by the agency's attempt at quantification or contrived HRV formulas for ill-begotten scientifically unsound management.

As outlined and illustrated in analogy above, however, ecological patterns and ecological processes do not follow a unidirectional relationship across the landscape over time, or even a bidirectional relationship, but rather relate through a complex ordination of internal and external drivers that interact across multiple spatial and temporal scales. The relationship between pattern and process ultimately encodes the ecological status and functioning of large ecosystems, and the integrity of this relationship is fundamental to the integrity of landscapes – moreover, restoring the integrity of both ecosystem functions / processes and forms / patterns is fundamental to the integrity of restoration projects (**Kauffman et al. 1997**, Noss et al. 2006b, Franklin and Johnson 2012, Hessburg et al. 2015). Nonetheless, the FEIS shows a clear bias towards analyzing and managing for ecological patterns, as embodied by measurable forest conditions, at the expense of ensuring the viability of ecological processes. The FEIS forwards an unsubstantiated assumption that the resiliency of presettlement landscapes will be restored by emulating the quantitative distribution of presettlement forest conditions, with the restoration of presettlement ecosystem processes either arising as emergent properties from those forest conditions, or otherwise being secondary – if not wholly extraneous – to the restoring of presettlement resiliency. The heavy reliance on this erroneous assumption, disproven by the aforementioned references detailing the importance of the relationship between pattern and process in disturbance-prone landscapes, in developing the desired conditions and management goals within the FEIS represents a failure to use best available science.

Not limited to the faulty and inaccurate management objectives to restore presettlement resiliency, the specific management activities found in each alternative also rely on the false assumption that restoring presettlement resilience can be achieved by emulating presettlement patterns alone. Restoring presettlement landscape conditions without restoring presettlement landscape processes will not implicitly or automatically confer resiliency to the landscape, but in analyzing the management activities prescribed in each alternative, the FEIS neglects to acknowledge this common scientific principle that patterns and processes interact dynamically across the landscape and are both crucial to ecosystem functioning.

Specifically, the reliance on active restoration of dry forests through commercial logging and mechanical thinning treatments in Alternatives B, D, E, E-Modified, E-Modified Departure, and F to achieve desired conditions of forest structural stages, densities, and species compositions demonstrates that management objectives are neglecting to consider the importance of ecosystem processes. Restoration can be superficially emulated by intervening to create visually similar forest conditions as may have existed in presettlement forests. However, those forest conditions were not alone responsible for the landscape-level resilience characteristic of presettlement forests, but rather relied on disturbance events and successional patterns to confer resilience. Logging dry forests to reduce stand densities and reduce fuel accumulations will not produce the same ecological conditions as were achieved by wildland fire in presettlement forests, and therefore these "restored" dry forests will not contain the same resiliency as presettlement forests.

Among the many components not considered accurately or adequately in the FEIS, such logging, utilizing heavy machinery, devastates forest soil communities, destroying fungal communities essential to resilient healthy forests. Further such logging severely diminishes soil hydrological functioning, soil moisture retention and flow patterns, which in turn are fundamental in creating resilient forests. Such logging harms the abundance and distribution of biodiversity throughout the affected and adjoining areas – from soil biotic communities, invertebrate communities, avian species and terrestrial wildlife communities – all are adversely impacted by the intrusions and degradation left in the wake of commercial logging. As mentioned earlier, nutrients, minerals, and carbon pulled from the forest soils and communities over the life cycles of area trees would be lost to the area by logging removal whereas in a natural forest environment there would be no such lost. Indeed, HRV systems were not ones impacted by logging extraction, but instead were closed loop systems wherein trees eventually died, fell, and replenished the soils with the return of their nutrients and minerals. As such, the agency's HRV assumptions that logging can in any way mimic these ongoing millennia old natural processes are scientifically unsubstantial and as such violate the clear requirements of the NEPA. Sophomoric myopic formulas, fixated on widespread logging agendas, cannot equate with NEPA's requirements for scientific integrity, accuracy, expert advice, and the requisite "hard look" of valid analysis.

While a change in physiognomic structure will inevitably have impacts on ecological function, restoring old forest single story (OFSS) structure in dry forest types, without restoring natural processes, natural hydrology, maintaining nature's cyclic closed loop systems of growth and replenishment, in addition to returning fire to the landscape, will result in decreased gains compared to a restoration of passive, fire-maintained open woodlands (Noss et al. 2006a). Insofar as Alternatives E, E-Modified, and E-Modified Departure emphasize active management via commercial harvests, logging, and mechanical fuel reductions over passive management via wildland fire and prescribed burning, the ecological benefits of OFSS stands restored under these alternatives will be significantly less (and ultimately far more problematic) than the ecological benefits of OFSS stands restored under alternatives that emphasize the restoration of natural processes across the landscape.

The degree to which fuel reduction treatments that employ mechanical thinning without fire will confer resilience and ecosystem functioning to dry upland forests is dubious. The FEIS acknowledges the many direct and indirect impacts of burning that are not achieved by or directly replaceable with logging or mechanical fuel reduction programs (FEIS v2 pg208-9). Failing to restore and maintain the integral ecological process of fire across the landscape will inevitably lead to degradation of forest ecosystems and further departure from HRV across the landscape, unless intensive management actions are undertaken to mimic wildland fire impacts (and, even then, mechanical treatments that do not include burning fail to adequately replicate ecological processes). Without allowing wildland fire to return to the landscape in its presettlement role, forest restoration will fail to recreate historical structures and fail to provide adequate wildlife habitat, adequate ecosystem services, adequate ecological functioning, and adequate resiliency for forest stands (Langston 1999, Kauffman 2004, Noss et al. 2006b). Managing wildfire to produce and maintain specific, static ecosystem components, rather than dynamic ecosystem processes, will result in capricious swings in management responses to wildfire based on the current snapshot of evolving forested vegetative conditions. Rather than attempting to manage a dynamic process in terms of static states, wildfire should be managed as a dynamic ecosystem process to meet the range of historic conditions maintained under the presettlement fire regime, which will allow for simplified and flexible management approach.

Moreover, the attempt to replace the natural role of wildland fire with mechanical activities, such as reducing stand densities and fuel accumulations through logging and crushing fuels, will require regular active maintenance indefinitely. Strategies that require repeated stand entries to maintain reduced fuel loads in "restored" dry forest stands will further compact soil, reducing site productivity and aggravating erosion, while also severely damaging hydrological function, and will fail to restore landscape processes that are vital to resilient ecosystems: all important ecological impacts that the FEIS fails to consider.

It is doubtful that restoring landscape conditions for vegetative composition, structural stage distribution, and stand structure & density distributions of presettlement forested ecosystems in the Blue Mountains will lead to increased forest resiliency in the face of changing climatic conditions and evolving disturbance regimes and ecosystem processes, or that such restoration strategies truly comprise restoration (**Kauffman et al. 1997**, Langston 1999, Millar and Woolfenden 1999, Kauffman 2004, Noss et al. 2006a). For the forests of the Blue Mountains physiographic province to achieve the resiliency necessary to adapt to climate change and provide ecosystem services for social and economic needs, fire, as the primary disturbance agent and driver of ecological change in presettlement conditions under which these forests evolved, must be returned to its historic role in maintaining old forests and initiating new early seral ecosystems. Fire is ecologically beneficial in low, mixed, and high severity regimes, and provides critical processes, such as nutrient cycling and creation of high-value patchy habitat mosaics (Agee 1998, Franklin and Johnson 2012, Hessburg et al. 2015), which cannot be fully replicated through mechanical treatments in either stand-level ecological effect or on landscape-level distribution (DellaSala et al. 1995, Agee 2002, Noss et al. 2006a). In direct contradiction to the restoration activities analyzed within the FEIS, research demonstrates that for fuel treatments in western forests to be effective, they should focus on protecting ecosystem components and processes, rather than focusing on target stand structures or fire ratings (Reinhardt et al. 2008), and that managing for ecosystem processes can be far more cost-efficient and ecologically appropriate in managing dry western forests (Agee 2002, Noss et al. 2006a). **The FEIS fails to adequately employ readily available science regarding the centrality of ecosystem processes and disturbance events in perpetuating resiliency, and develops inappropriate management alternatives that are likely to create undue, adverse environmental impacts and misrepresenting those alternatives as beneficial to returning resiliency to the landscape through restoration activities. In this, the FEIS and ROD fail the requirements of the NEPA and must be withdrawn. A new, scientifically sound, legally compliant Supplemental Forest Plan Revision EIS process must be conducted.**

IV. Developing historic range of variation assessments

The VDDT HRV model fails to include standard scientific practices from landscape ecology in its HRV analysis, and resultantly is inadequate in its representation of historic landscape conditions and ecological processes. The VDDT HRV model does not provide sufficient information needed to develop management alternatives, and the reliance on incomplete HRV analyses within the FEIS represents a failure to use scientific integrity.

The HRV model fails to include standard and accepted landscape ecology metrics in its analysis, including consideration of spatial characteristics such as patch size, landscape position, topographic refugia and corridors, and edge effects. Developing a template for desired conditions of structural stages, species composition, stand densities, and wildland fire regimes must include spatial and temporal resolution on fine-, meso-, and coarse-scales to provide meaningful information for landscape planning in order to achieve management objectives. Namely, the spatial extent of disturbances and the resultant pattern of patch size, edge ratio, core area, and relationship with surrounding patches through landform effects, topographic corridors, and locations of refugia all are necessary in defining the landscape-level impacts of a given disturbance regime and contribute to the functionality and resiliency of ecosystems (Camp et al. 1996, Agee 1998).

However, the HRV model created through Vegetation Dynamics Developing Tool (VDDT), "used as the primary basis for developing the desired conditions for forest vegetation structure, density, and species compositions" (FEIS v2 pg109), is a non-spatial state and transition model. While this model can provide coarse generalizations about ecosystem conditions and processes, it specifically does not provide the required landscape ecology metrics needed to assess departure between historic and current landscapes, or to develop management alternatives.

Specifically, in regards to landscape fire ecology, the VDDT HRV model fails to provide necessary guidance for management of wildland and prescribed fire patch sizes or for the distribution of fuel reduction treatments, on either the landscape- or stand-level. Ecologically, the size of burned and unburned patches of differing levels of severity and the distribution of those patches across the landscape and throughout different forest types is fundamental in the creation of habitat edges and mosaic patches of forest stand conditions, both of which determine the ecological value of wildlife habitat and shapes beta diversity across the landscape (Agee 1998, Agee 2002, Brown et al. 2004, Reinhardt et al. 2008, Hessburg et al. 2015). The seasonality and the range of return intervals of a fire regime drive vegetative responses and are critical in shaping the successional patterns of post-fire ecosystems (Age 1998, Heyerdahl et al. 2001, Hessburg et al. 2015). Without considering the spatial and temporal aspect of historical fire regimes, the HRV assessment neglects to analyze foundational aspects of how fire affects and is affected by landscapes. The FEIS and the VDDT HRV model fail to provide the information required to create management plans that accurately and effectively guide fire and fuels management in order to reconcile existing environmental conditions and processes with the historical environmental conditions and processes under which the ecosystems of the Blue Mountains adapted and are most resilient.

The HRV model artificially narrows the parameters of presettlement landscape conditions and processes in failing to disclose infrequent but ecologically significant departures from equilibrium disturbance regimes and by developing objectives for management from a mean value extracted from the model, rather than employing the values established from scientific research regarding historical conditions. The FEIS states that the VDDT HRV model analyzed results from multiple model simulations to extract a mean value, and represented HRV as the range encompassed by two standard deviations around that value (FEIS v2 pg109). However, as expressed above, the historic range of variation is best understood as a complex ordination of multiple variables interacting with each other antagonistically and synergistically across spatial and temporal scales. It is not possible to reduce such a complex ordination to a "mean value", and the FEIS is willfully incomplete in concluding that the entire dynamic envelop encompassing the historical range of landscape conditions and disturbance processes is adequately represented by ±2 standard deviations of such a one-dimensional value.

It is important that the envelope surrounding the range of historical conditions is representative of what maximum and minimum events occurred, as well as depicting the periodicities, trends, processes, and dynamic behaviors that characterized historical ecosystems (Swetnam et al. 1999, Noss et al. 2006b). Managing landscapes in reference to HRV must not artificially narrow the envelope to provide an expectation of constancy that would be exclusive of historic, catastrophic disturbances or significant departures from the annual disturbance regime. It has been clearly noted in scientific literature that ecosystem functionality depends on the entire range of disturbance regimes, and restoration activities must include the entire range of HRV conditions to achieve desired benefits (Swetnam et al. 1999, Agee 2002, Noss et al. 2006a, Hessburg et al. 2015).

Specifically, the HRV construction for dry ponderosa pine and mixed-conifer forests does not reference the infrequent but ecologically significant departures from a low-severity, high-frequency fire regime, which are well represented in the historical record, in constructing the distribution of disturbances across the dry forest landscape. The FEIS fails to discuss the ecological significance of how mixed- and high-severity fires played a historic role in the distribution of age classes across the landscape, resulting from non-equilibrium catastrophic disturbances that punctuated periods of equilibrium disturbances in dry and moist forests (Shinneman and Baker 1997, Heyerdahl et al. 2002, Pierce et al. 2004, Hessburg et al. 2007). Historically, mixed- and high-severity wildfires played a role in ecosystem development and landscape functioning, albeit at a much longer interval and much larger spatial arrangement than low-severity, high-frequency fires within a given dry forest stand. Although mixed- and high-severity fires occurred infrequently in dry forest types of the Interior Columbia River Basin, the patterns and processes created by these non-equilibrium events were crucial components of the landscape ecology of presettlement forests (Shinneman and Baker 1997, Agee 2002, Pierce et al. 2004, Hessburg et al. 2007, Baker 2015). The failure to reflect the importance of these events in the HRV model reflects the shortcomings of this model to adequately depict presettlement landscape conditions with the fidelity required to construct and implement management actions that contain a high probability of achieving management goals of restored ecosystem resiliency.

The FEIS does not adequately consider the ecological significance of infrequent, high-severity fires in dry forests across the presettlement Blue Mountains or adequately analyze the current role played by mixed- and high-severity fires in dry forest types in reference to evolving landscape dynamics accompanying climatic changes. The FEIS states succession of shade-tolerant species and closing densities in dry forests stemming from anthropogenic fire suppression is to blame for recent and future increases in fire size and severity, which is used as justification for active management to decrease stand densities and increase the shade-intolerant component of dry forests in an attempt to restore presettlement dry forest conditions. However, in determining that dry forests are in need of restoration due to recent high-severity fires, the FEIS does not recognize the historical occurrence of high-severity fires in dry forests and therefore is negligent in its conclusion that the potential for high-severity fires in dry forests must be reduced through dry forest restoration.

Finally, the FEIS fails to qualify the temporal extent for which the VDDT HRV analysis was constructed, and neglects to disclose how climatic changes occurring prior to and since settlement have shifted the composition, structure, and function of ecosystems. The FEIS states that HRV analyses were constructed from simulations modeled for 500-year increments (FEIS v2 pg109). However, there is no information provided about the data included within this modeling regarding century-scale climatic change and the top-down forcing experienced by Blue Mountains forests. Rather, it appears the HRV modeling included a 500-year timespan that was entirely decontextualized from the conditions of the 500 years preceding European colonization in the Blue Mountains, but merely represented a numeric value over which annual model iterations were calculated, devoid of external drivers or historic data.

In reality, numerous studies have demonstrated that the climate of pre-Columbian North America, and the Blue Mountains in particular, experienced drastic shifts throughout the Holocene (Millar and Woolfenden 1999, Heyerdahl et al. 2002, McKenzie et al. 2004, Pierce et al. 2004, Schoennagel et al. 2004). The 500 years before European settlement in the Blue Mountains region was characterized by broad climatic shifts from the Medieval Warming Period to the Little Ice Age, and continuing throughout the last 150 years since settlement (Millar and Woolfenden 1999). Such climatic evolution occurred – and continues to occur – on multiple timescales, including century- to millennial-scale trends punctuated with annual- to decadal-scale swings such as El Niño / La Niña and Pacific Decadal Oscillation. The impact of climatic forcing on ecosystem conditions and processes is well-documented: historical reconstructions and paleo-ecological charcoal and pollen analyses reveal that the composition, structure, and function of forests in the Inland Northwest and Northern Rockies have varied in response to broad climatic trends (Heyerdahl et al. 2002, McKenzie et al. 2004, Pierce et al. 2004).

The significance of climatic variation on ecosystem conditions and processes precludes simple comparisons between presettlement ecosystems and current ecosystems, in terms of the departure current ecosystems exhibit from their presettlement form and function. In constructing the HRV analysis, the FEIS entirely fails to account for the fact that the 500-year timespan used to model presettlement ecosystems would have been characterized by significant climatic changes which resulted in an evolving and dynamic set of ecosystem distributions, forest compositions and structures, landscape mosaics, and disturbance regimes. Multiple scientists have extensively commented on the need to understand HRV representations as situated in a dynamic continuum, rather than as depicting a static snapshot (Millar and Woolfenden 1999, Swetnam et al. 1999). Ecosystem conditions and processes have varied significantly since the last glacial maximum to immediately prior to European settlement, which directly contradicts the assumption that there can be a clear distinction between pre- and post-settlement ecosystems, differentiated only by the anthropogenic impacts associated with colonization. Instead, the HRV analysis must qualify the time period and climate for which it was constructed – which, in the case of the FEIS, would be a 500-year period prior to European settlement in the 1800's, stretching back to the 1300's. This time period corresponds to the closure of the Medieval Warm Period and the full extent of the Little Ice Age. Associated with each of these climatic periods were changes in seasonal temperature and precipitation patterns and weather extremes, thereby shaping forest structure and composition, fire regimes, upper and lower treelines, and distributions of grasslands, shrublands, woodlands, and forests.

Therefore, to represent the conditions and dynamics characteristic of the Blue Mountains from the mid-1300's to the onset of colonization in the mid-1800's, the VDDT model must include the climatic data of those 500 years. Instead, the content-less 500-year modeling iteration, used to approximate HRV steady-states in spatial and climatic isolation, results in an arbitrary HRV construction which has no basis in the ecological realities found in the Blue Mountains prior to settlement. The failure of the FEIS to utilize necessary data and to consider the needed temporal contextualization in analyzing HRV models demonstrates a failure to use standard scientific practices.

Furthermore, the climatic conditions of the 500-year time span used to characterize HRV as compared to the projected future climate of the Blue Mountains raises serious concerns as to whether the HRV model is applicable and appropriate for constructing desired conditions to restore forest resiliency (DellaSala et al. 2003). The 500 years prior to European colonization contained the Little Ice Age, a climatic period characterized by cooler temperatures, advancing glaciers, and higher moisture availability throughout much of the Blue Mountains. Ecosystems reacted to these climatic conditions through altered fire regimes, stand densities and species compositions, and changing treelines and ecotones. Specifically, the prevalence of low-severity fire regimes in dry and moist forests decreased during the Little Ice Age as higher precipitation allowed for vegetative growth and accumulation of fine fuels, followed by periods of mild drought which selected for frequent, low-severity fires (Pierce et al. 2004). In marked contrast, the climatic period preceding the Little Ice Age, referred to as the Medieval Warming Period due to elevated temperatures, receding glaciers, and lower levels of precipitation, was characterized by higher incidences of high-severity fires in both dry and cold forests (McKenzie et al. 2004, Pierce et al. 2004). The state of the Blue Mountains environment prior to European arrival was not a static picture but a dynamically evolving landscape, and the climate at the time of colonization lead to clear ecological responses in disturbance regimes and vegetative composition and structure of forests. However, the HRV model does not account for the fact that presettlement landscapes were evolving, and that the condition of the Blue Mountains at the time of colonization reflects a climate that was significantly cooler and wetter than the climatic conditions expected under climate change (Millar and Woolfenden 1999). Rather, the Medieval Warming Period provides a more appropriate climatic analog, and the ecological conditions of this period, including disturbance regimes and vegetation, are a more appropriate template for constructing HRV assessments if preparing forests to have increased resilience in the face of changing climatic conditions and disturbance regimes is a central management goal. In fact, attempting to restore the ecological characteristics and processes that existed during the Little Ice Age under a significantly divergent climate and land-use patterning may be entirely unachievable, and moreover climatically inappropriate and untenable (Langston 1999, Millar and Woolfenden 1999, Reinhardt et al. 2008). That the HRV model employed by the FEIS does not acknowledge the centrality of climate on shaping ecological conditions and processes, and that the contrasting climates prior to settlement and their similarity to the predicted future climate was not taken into consideration, demonstrates a failure to use best available science in developing desired conditions and strategies to increase the resilience of future forests by attempting to restore them to presettlement conditions.

Ultimately, the FEIS is critically flawed in its construction of the historical range of variation within Blue Mountains forests. The FEIS's desired conditions for forested vegetation, which were constructed in reference to these flawed HRV model outputs, must be revisited to adequately portray the full extent of presettlement landscape conditions and processes that contributed to vegetative development and ecosystem resiliency across the entire range of spatial and temporal scales. More fundamentally, the FEIS must analyze whether restoration of presettlement conditions and processes, as depicted in the HRV model and as resulting from the climatic conditions of the Little Ice Age, are achievable and ecologically appropriate for the future climate of the Blue Mountains.

The continued changes in regional and global climate since settlement have precipitated ecological changes within the Blue Mountains region, which have interacted with European impacts through land use changes, altered disturbance regimes, landscape fragmentation, and introduction of exotic species to shape today's landscape. The fact that European impacts of the past 150 years occurred concurrently with continued climatic change prevents a direct comparison of current ecological conditions with the ecological conditions that existed immediately prior to settlement, thereby confounding departure analyses that do not account for how historic landscapes may have evolved in response to climate change, absent European intervention.

V. Assessing current landscape conditions and processes, and determining the degree of departure between existing and presettlement conditions and processes

The assessment of current forested species composition and degree of departure from historic forested species composition relies on inaccurate science and represents a lack of scientific integrity, by using inappropriate survey techniques and failing to employ adequate multivariate analysis for assessing forest composition across structural stages, age classes, and potential vegetation groups.

The reliance on coarse-scale Potential Vegetation Group classification to assess historic conditions and determine departure in current stands represents a failure of the Forest Service. Coarse-scale filters fail to account for the effects of landform and topographic impacts, soil, and regional gradients on site productivity, and result in misclassification of stands and improper assessment of current conditions and management needs.

Critically important, and conspicuously absent from consideration in the FEIS, is the impact that regional climate and macro-topographic position has on disturbance regimes and landscape conditions. Directly relevant to the planning region, Heyerdahl and others (2001) document the significant gradient in disturbance regime and landscape condition between the northern and southern Blue Mountains. In constructing a single EIS, applying a uniform set of desired conditions, and using a single HRV model to analyze the environmental impacts of management prescriptions developed and applied across the 4.9 million acre planning area of the Malheur, Umatilla, and Wallowa-Whitman National Forests, with merely superficial considerations of important ecological distinctions within the region that result from climatic and topographic gradients, the FEIS fails to account for the diversity of potential responses to management activities across the planning region, even within a given forest type, and fails to prepare for unanticipated and potentially significantly deleterious impacts.

In addition to poorly considering the full range of historical landscape conditions and processes across multiple spatial and temporal scales, the FEIS also relies on several analyses of current conditions that misrepresent the state of ecosystems in the Blue Mountains. Current Vegetation Survey (CVS) plots used to determine species composition and shade tolerance classes of current forested vegetation fail to include survey techniques that can differentiate between recent successional changes versus inherent site productivity in determining the relative component of shade-tolerant species. Starting from an inaccurate assessment of current conditions, the FEIS cannot properly analyze the need for and the impacts of different management alternatives.

Specifically, in assessing the degree of departure of current forest conditions from historical conditions, the FEIS analyzes forested species composition and shade tolerance class as one indicator. "The existing species composition for forest vegetation was characterized using the current vegetation survey data and by examining the Forest Service existing vegetation polygon data. The species cover type was determined by the dominant tree species based on basal area," (FEIS v2 pg117). However, determining which species dominates a stand from total basal area will fail to discriminate between size- and age-class differences, which can misrepresent the successional pathways of the stand and obscure the site's PVG classification. Rather, determining species composition from quadratic mean diameter of canopy species and total number of stems will indicate which species are established in the canopy, and which species are successfully reproducing. An analysis of the size and age class distribution of stems by species will be much more illustrative of successional trends and site productivities. By indicating whether shade-tolerant species are newly reproducing (which indicates a recent ecological shift based on fire suppression from dry forests) or whether shade-tolerant species are successfully established as canopy species (which indicates that the site is capable of supporting more dense and mesic forests than the surrounding matrix PVG classification). Such an analysis is crucial to assess the successional trajectory of stands and to determine whether or not such successional pathways represent a deviation from the historical range of variation.

Additionally, the FEIS employs unacceptably incomplete analyses to determine departure between historic and current forests for shade tolerance classes, in neglecting to analyze vegetation across structural stages / successional stages and by potential vegetation groupings (PVG). Comparing the historic and current forested species assemblages and shade tolerance classes must be conducted in reference to the structural stage / successional stage and the PVG that the forest falls within. Failure to employ this multivariate screen when analyzing species assemblages will lead to misrepresentations of the presettlement conditions and may lead to the selection of inappropriate restoration targets. Namely, failing to discriminate between early-seral stands dominated by shade-intolerant species, and late-seral stands that include mixtures of long-lived shade-intolerant species with shade-tolerant species, and the differences in successional pathways and potential climax conditions that exist between different PVGs, will produce homogenized targets for species assemblages and shade tolerance classes across the landscape.

In reference Table 270 (FEIS v2 pg118): do species composition analyses referenced in the FEIS differentiate between stand structural stages? The FEIS provides information on existing species composition by shade tolerance class and PVG in the three national forests (Table 270) but does not include a critical multivariate analysis to compare shade tolerance classes across successional stages, as the relative percentage of shade tolerant and shade intolerant species within stands shift with stand age and successional stage. Tables 282-290 also provide desired conditions extracted from the HRV model for the distribution of tolerance classes by PVG for each national forest, but again do not include necessary differentiation between successional stages for those desired conditions. Doing so will shed more light on how species assemblages form and develop over the lifetime of a stand, as well as inform management efforts seeking to restore old forest conditions. Failure to differentiate between stand structural stages in analyzing species assemblages will misrepresent presettlement forest conditions within the modeled HRV, which will result in ecologically and historically inappropriate restoration treatments that may inadvertently select for shade intolerant species within old forest conditions, without recognizing that dominance by shade intolerant species in early- and mid-seral stands distorts the average species composition for the entire landscape as compared to the species composition historically characteristic of late-seral old forests.

In formulating the desired conditions for shade tolerance classes, the FEIS does not include basic ecological principals – that early-successional forests contain a higher percentage of shade-intolerant species; that site productivity shapes successional patterns; and that the relative percentages of shade-tolerant and shade-intolerant species vary in mature and old forests across different forest types. The FEIS relies on scientifically inaccurate assessments of current forest conditions through a willfully superficial CVS analysis, and fails to employ standard and necessary multivariate assessments to compare species composition across successional stages. Consequently, the FEIS species composition targets are produced from an inadequate analysis, and the development of management alternatives to meet these targets will fail to achieve the desired goal of restoring presettlement forest conditions and will likely result in an indeterminate plethora of undesirable ecological impacts.

With all of the aforementioned indicators considered in the departure analysis, the FEIS fails to employ necessary nuance to differentiate between vegetative community classifications and the ecological conditions associated with each. Specifically in dry and moist forests, and especially so on the broad ecotone of the two, the FEIS provides no methodology for classifying forests within either PVG. Classifying a stand within the dry forest PVG or moist forest PVG implies significant differences in management objectives arising from differing desired conditions for each PVG. Dry forests and moist forests historically and today support different stand densities and species compositions, exhibit different climax stages and old forest conditions, and experience different disturbance regimes and ecosystem processes. Classification of a given stand within the dry or moist PVG will result in significantly different expectations of the stand's presettlement conditions, and therefore result in significantly different assessments of the stand's degree of departure from those presumed presettlement conditions.

However, the FEIS does not recognize that the dry forest-moist forest ecotone is finely patterned. In dry forests, site productivity – and therefore, natural vegetative composition and stand densities – depends significantly on slope, aspect, elevation, topographic position, regional location, and soils (Spies et al. 2006). The FEIS does briefly acknowledge that "productive soils occur in valleys and basins where soils are often deep and have high water-holding capacity due to their increased volcanic ash content," (FEIS v2 pg105), but provides no further explanation of how increased site productivity arising from sheltered sites with ashy soils corresponds with naturally denser stands supporting more shade-tolerant species assemblages, as compared to less productive sites of similar location. In contrast to the coarse designations of entire stands as belonging to either the dry forest PVG or moist forest PVG, historical records reveal a complex mosaic of dry and mesic upland forests (Schoennagel et al. 2004, Spies et al. 2006). Such a heterogeneous mosaic is easily lost through indiscriminate classification of stands' PVGs without on-the-ground verification. Restoration activities informed by such indiscriminate classifications will prove to be ecologically inappropriate, if restoring presettlement conditions is the management objective, as such attempts would seek to convert all low-elevation forests to open ponderosa pine woodlands, regardless of the site productivity or naturally-occurring forest conditions. Indeed, researchers clearly state that broad forest classification and modeling – such as those employed capriciously across the Blue Mountains national forests and cited for analysis within the FEIS (Morgan et al. 1996) – fails to include fine-scale spatial resolution that would be needed for making site-specific determinations of expected tree distribution and forest classification (Fettig et al. 2013). Moreover, presettlement stand conditions, and therefore the degree of departure, varied not only on a fine-scale between site productivities on the dry and moist forest ecotone, but also within the dry forest PVG and within the moist forest PVG in response to regional climatic and topographic gradients (Camp et al. 1996, Hessburg et al. 2015). Fire return intervals, stand densities, and species compositions – even within the homogenous classification of dry forest PVG, as used indiscriminately within the FEIS – varied significantly between the moister, more maritime northern Blue Mountains and the drier, more continental southern Blue Mountains, as well as in response to topographic features that alternatingly provided fire refugia or corridors for the spread of disturbance. The effects of topographic position on productivity, regeneration, and stand density are most pronounced in dry forests (Spies et al. 2006), a fact which is further neglected by the FEIS in developing uniform desired conditions and management goals for the dry forest PVG for all three national forests, with no nuance whatsoever for ensuring that forests classified within this PVG are in fact dry forests, and for tailoring desired conditions and management objectives by location and site. Such nuance is paramount to ensuring that degree of departure assessments, and the restoration activities they inform, adequately depict presettlement conditions and accurately characterize the ecological conditions and processes that each stand is capable of supporting. The failure to include this nuance within the FEIS fails to employ the best available science to ensure that management impacts are commensurate with the expressed goal of restoring ecological resiliency as existed in presettlement landscapes.

The assessment of current fire regimes and comparison with historical fire regimes is inadequate and does not include needed information to inform the development of management alternatives and to analyze their environmental impacts. The failure to include standard scientific practices regarding multivariate analyses of fire regimes and consideration of landscape ecology metrics represents a lack of scientific integrity in assessing current and historic fire regimes, assessing the degree of departure, and determining the need for restoration activities. The failure to analyze both extent and severity of fire regimes by forest type and landscape position will produce inaccurate conclusions of recent changes in fire regime, insofar as fire behavior varies not only by vegetative cover but also by landscape position (as well as time of day, seasonal fluctuations, hydrological patterns on the local scale, and in correlation to other intertwined natural cycles, such as insect-caused levels of tree mortality, variations of stand age and vegetative cover, fungal communities and the mix of seasonal and moisture patterns, etc.) and therefore requires a multivariate analysis to produce accurate comparisons.

VI. Designing objectives, goals, standards, and monitoring for management activities, and resolving operational discrepancies between planning and implementation of management activities

A. Adaptive Management

The FEIS fails to establish adequate monitoring regimes to assess validation / implementation of management activities and to inform adaptive management. Adaptive management is critically important to the success or failure of achieving desired conditions and management goals within a management plan. Adaptive management standards and structures must be included within the development of management alternatives to ensure that systems to implement adaptive management are actually included within management programs. Including the standards and structures needed to implement adaptive management within the FEIS would also allow for analysis of the sufficiency of adaptive management objectives, monitoring schedules and indicators, decision-making structures, and assessment strategies. Analyzing these metrics is necessary to determine the potential for the success of adaptive management programs, which in turn is necessary to determine the potential for the success of implementing management plans to produce the desired results and to integrate new information as it becomes available. Including robust programs for adaptive management is absolutely necessary to ensure that the implementation and effects of management actions match the stated desired conditions and goals. Adaptive management is necessary to provide built-in opportunities to refine management plans if the implementation or effects are inconsistent with desired conditions or goals, and to integrate new information into management plans. Insofar as the development of management alternatives relied on multiple assumptions, the validity of which remains untested, due diligence to minimize adverse impacts from such assumptions being included in management plans necessitates that explicit adaptive management programs be included within the development of alternatives. Throughout the FEIS, the agency has elevated plans that place intrusive logging activities far above the protective and passive management actions recommended by ecological science. The agency's logging plans are based upon arbitrarily chosen piecemeal assumptions that defy credible scientific research and recommendations. Additionally, as climate change represents an as yet not fully understood factor in how it will continue to manifest over time across the region, and as scientific research is ongoing concerning the synergistic complexities of climate change and regional ecosystems cycles and processes, the FEIS at best would have developed prominent provisions for incorporating emerging relevant science as this arises, and for critically evaluating agency assumptions and the actual impacts of management actions – with the ability to swiftly halt or modify activities before yet more serious widespread landscape management harms are incurred. Yet such provisions are absent in any meaningful way within the FEIS, which instead continues its narrow focus on opening much of the region's forests to elevated levels of logging and other intrusive actions, as exemplified in the assumptions below:

Specifically, the FEIS states the following assumptions:

> • Timber harvest restoration activities would focus in areas with established road systems (primarily within MA 4A General Forest)….
> • All vegetation treatments (wildland fire and timber harvest) are assumed to improve resilience by moving all potential vegetation groups toward the desired conditions." (FEIS v1 pg27).

Elsewhere, the FEIS assumes that:

"• All harvest schedules were designed with consideration of moving toward the overall desired conditions for forest vegetation structure, density and species composition.

• Because of the recognized scarcity of old forest structure stages in terms of the desired conditions, only uneven-aged management or thinning harvests were modelled (sic) within these stands,"

(FEIS v2 pg164). *(Exemplifying the failure to take a hard look at honoring the protection and restraint recommended by research to take protective and passive actions in rare old growth locations instead of subjecting these to the known harms of logging-‘thinning’ impacts.)

In conjunction with the need to include robust adaptive management programs and regular monitoring, additional clarification of the included standards and guidelines is necessary to ensure each will produce the desired results during operations, and to properly analyze the probable environmental impacts of each alternative. Strict standards and robust adaptive management programs are especially necessary considering the reliance on unsubstantiated assumptions as fundamental principles used in analyzing the management alternatives within the FEIS. However, there are no standards included within the FEIS to ensure the implementation of management actions to achieve management goals and objectives would be in alignment with these assumptions. The reliance on untested assumptions in the development of management alternatives, with no standards to ensure that actions do in fact follow those assumptions, and with no standards and structures in place to provide for adaptive management programs should those assumptions prove to be incorrect, is misleading.

Indeed, such harmful logging-driven planning is consistent with the agency’s past decades of management actions in that, reviewing the rational for the many harmful logging activities over the previous decades, one can find a host of failed assumptions. Given the overly abundant evidence of harmful management activities across the region’s forest landscape, it is unwise to continue this same pattern of reliance on unproven assumptions that from the onset are in contravention to the clear protective recommendations of credible ecological science. Further, to propose as in this FEIS, to undertake such irreversible management actions absent meaningful provisions requiring the incorporation of new relevant science and ongoing critical evaluations of the actual impacts of irretrievable actions as they occur, the agency has set their planning stage for serious failures with consequent irreparable impacts to the region’s ecosystems. With the growing onset of climate change there exists no place for such failure. Clearly, restraint and protection, deferring to nature’s inherent resilience are much more in accord with science and foresight.

As emphasized above, successful adaptive management programs must be able to continually assess the impacts of management actions in order to modify programs. Assessing the impacts of management actions first requires differentiating between anthropogenic impacts and climatic impacts on ecological conditions and processes, to differentiate between the ecological impacts of different management strategies, as compared to the ecological impacts that unfold as landscapes respond to climate change and non-anthropogenic external drivers (McKenzie et al. 2004). Determining the response of landscapes to climate change and non-anthropogenic external drivers requires having extensive areas where landscape-level processes can remain functional without direct human impacts, to serve as references for adaptive management (Noss et al. 2006b). For such processes to remain intact without anthropogenic influence, stringent prohibitions from active management must be installed and protected under Wilderness designation. Such “reference landscapes” are needed to demonstrate the impacts of management activities on ecological conditions by establishing a baseline of ecological change and landscape evolution driven solely from external, top-down climatic drivers. Informed adaptive management requires having accurate understanding of the impacts of management activities, and therefore requires having large “reference landscapes” placed under Wilderness designation, with such areas reflecting the range of forest types, elevations, and topographic features that occur within the Blue Mountains planning area. Implementing long-term research to analyze the response of intact, unmanaged dry forests to climate change and changing disturbance regimes will help clarify the actual impacts on managed dry forests by 'thinning and fuel reduction' logging programs. Such long-term research requires large, intact landscapes with permanent protection from active management, which can only be guaranteed through the development of new Research Natural Areas, Potential Wilderness Areas, and adding to existent Wilderness Areas. In this FEIS, the agency had the opportunity to add up to 1.8 million acres to these so essential management designations. Instead, the agency only added less than 5% of this area, opening up over 1.7 million acres to widespread logging and other management harms, forever preempting the ability to conduct the level of landscape scale research necessary to accurately assess and address management assumptions, impacts, and the natural ecological adaptations of the region's forest processes and cycles to manifesting climate change.

Alternative E-Modified and all other analyzed alternatives, including the still insufficient piecemeal PWA provisions of Alternative C, fail to provide sufficient Wilderness additions to safeguard remaining intact landscapes for preservation of indigenous ecological processes and functions to use as references for informed adaptive management. The areas currently protected under Wilderness designation and recommended for inclusion reflect a bias towards high-elevation and montane landscapes containing cold, subalpine forests, and therefore fail to provide needed references for low- and mid-elevation moist and dry forests.

B. Indicators used to assess environmental impacts across alternatives

The indicators against which the environmental impacts of management alternatives on forested vegetation and wildfire will be gauged fail to include critical components of landscape ecology mentioned above, and do not provide sufficient information to adequately assess the environmental impacts associated with each indicator. For forested vegetation, the monitoring indicators contain:

> "Indicator: Percent of upland forest potential vegetation groups in each forest structural stage at year 20 and year 50.
>
> Indicator: Percent of upland forest potential vegetation groups in each species composition group at year 20 and year 50.
>
> Indicator: Percent of upland forest potential vegetation groups in low or high density conditions at year 20 and year 50," (FEIS v2 pg125).

Similarly, in analyzing the environmental impacts of management alternatives on timber and forest products, the FEIS employs the following key indicators:

"• Acres suitable for timber production
• Allowable sale quantity
• Total sale program quantity," (FEIS v2 pg172).

Of the indicators provided to assess the alternatives' impacts on forested vegetation, all focus on simplified, quantifiable measures, with no emphasis placed on spatial or temporal distributions of the indicators, or of dynamic ecosystem functions or processes associated with the indicators. No key indicators were provided to compare the alternatives' impacts on wildland fire, disturbance regimes, or ecosystem processes, which constitutes complete negligence to adequately analyze the environmental impacts of compared management alternatives. These indicators wholly fail to provide any degree of nuance necessary to differentiate between management alternatives and their impacts on the Blue Mountains environment. No analysis of the silvicultural treatments, distribution of treatments and harvests across forest types, spatial or temporal distribution of harvests, or non-harvest silvicultural activities for each alternative is included within analysis – all of which ultimately determine the environmental impact that logging and silvicultural activities will produce. Tables 115, 116, and 117 compare key indicators for the levels of vegetation treatments by alternative within the Malheur, Umatilla, and Wallowa-Whitman national forests, respectively. The key indicators compared are acres of even-aged regeneration harvest (clearcutting), acres uneven-aged management and commercial thinning, acres of total timber harvest, acres of planting, and acres of precommercial thinning. These indicators do not provide any needed context in order to determine their ecological impacts, however, and therefore fail to allow for an adequate analysis of each management alternative's environmental effects. Merely comparing the number of acres of a given timber activity by alternative, without at minimum discussing the distribution of treatments across potential vegetation groups, the harvest unit size, the methods of accessing stands and implementing treatments, the thinning and uneven-aged harvest prescriptions by potential vegetation group and by stand age / structural class, and the planting prescriptions for species' gene pools and stocking requirements provides only superficial numbers devoid of ecological or silvicultural significance. Tables 115 – 117 are inadequate in failing to provide information necessary for the analysis of management alternatives.

The FEIS neglects to use best available science in developing indicators to assess management alternatives, insofar as standard landscape ecology metrics and measures on fine-, meso-, and coarse-scales are not included among the indicators evaluated to assess the impacts of management alternatives on forested vegetation or wildfire. Indicators to be monitored should contain metrics such as patch size, core area, edge ratio, degree of fragmentation and dispersal corridors to similar habitat, and interactions of patches with landform and topography across spatial and temporal scales. Including landscape ecology indicators in the monitoring of forested vegetation is necessary to properly assess the environmental impacts of management alternatives on the habitat values provided by forests across PVGs. The failure to include these critical landscape ecology indicators in the monitoring of forested vegetation will result in unacceptably superficial and misleading environmental analyses of management alternatives.

Indeed, these indicators, in their focus on 'timber' and sale quantities fail to address the ecological realities of this emergent climate change era. They fail as well to address the region's diminished forest habitat connectivity, and the detrimental cumulative impacts of widespread past and current logging upon the forests' ecological resilience, wildlife population trends and abundance as compared to pre-European era, impacts to aquatic systems, and the excessive road densities from logging activities that riddle the region's forests. If given the NEPA's requisite ‘hard look’, such ecological indicators – absent in the FEIS – would raise the serious question of whether any of the region’s remaining forests acres are “suitable for timber production.”

Analyses contained within the FEIS to assess management alternatives’ impacts on restoring the HRV fire regime over-represent the significance of active management through logging and fuel reduction treatments, and fail to account for the ecological significance of prescribed and wildland fire in affecting dry forest conditions. As indicated above**,** assessing wildland fire regime by a purely quantitative index, such as the vegetation departure index score, presents scientifically inaccurate and misleading information, and the reliance of the FEIS on solely quantitative indicators, to assess management alternatives results in a misrepresentation of the management alternatives’ environmental impacts. Additionally, monitoring prescribed fire via quantitative measures that do not differentiate between forest type, landscape position, or return interval fails to provide necessary information about the role of prescribed fire under each management alternative, and further results in a misrepresentation of the environmental impacts associated with the proposed management alternatives.

The key indicators employed by the FEIS to gauge the impact of management alternatives on dry and moist forest restoration focus primarily on active restoration strategies, such as logging and fuel crushing, to the exclusion of considering passive restoration techniques. The FEIS includes the following indicators to assess management alternatives’ environmental impacts on ecological resilience:

> “Predicted Indicators (to reflect the level of management activity):
> • Annual forested vegetation active restoration activities (acres)
> • Road treatments in priority watersheds (miles)
> • Forage use in priority watersheds (intensity)
> • Improved riparian areas (miles)
>
> Key Indicators (to reflect resilient conditions)
> • Watersheds in improved conditions
> • Vegetation departure index value in the dry upland forest potential vegetation groups at year 50” (FEIS v1 pg24)

In focusing exclusively on active restoration, the FEIS over-represent the benefits of active management restoration strategies, including logging and mechanical fuel reduction, and fails to sufficiently account for the multifaceted role that is played by passive management and passive restoration strategies in achieving restoration goals and increasing resilience in dry and moist forests (Agee 2002, Noss et al. 2006a). The binary distinction between areas with active management, such as MA 4A, and areas with limited management, such as MA 1A and 1B, into areas that will be subject to consistent active management and areas subject to no management, constitutes a failure to adequately consider the range of strategies available to achieve restoration goals, such as using baseline stand restorations with active treatments and maintaining stands with passive treatment through prescribed and natural fire. Similarly, the FEIS does not consider evidence that restoration treatments for dry and moist forests that rely solely on wildland and prescribed fire may be viable in backcountry areas and areas with limited management, and that restoration goals in dry and mixed forests may be achieved even under higher fire severities

(Fule et al. 2004, Noss et al. 2006a, Noss et al. 2006b). In solely analyzing active restoration indicators to the exclusion of passive restoration strategies, the FEIS fails to reasonably provide and analyze a sufficient range of possible management strategies to achieve restoration of dry and moist forests, and presents misleading and scientifically inaccurate information about the viability of non-mechanical and passive restoration strategies, in **violation of the statutes of NEPA and NFMA**.

Additionally, the indicators used in the environmental analysis of restoration activities under each management alternative focus solely on quantitative measures, without consideration of the qualitative differences in restoration impacts between management alternatives. Ignoring the ecological differences between restoration techniques by comparing the environmental impacts of different restoration techniques only by number of acres treated produces a misleading and scientifically inaccurate comparison of management alternatives. In comparing the ecological impact of restoration treatments in dry and moist forests across different management areas and alternatives, the quality as well as the quantity of restored stands must be considered. Management strategies that prioritize active mechanical treatments and make little room for the return of natural fire ecology will contribute to further forest fragmentation and watershed degradation, from the expansion of road networks needed to treat and maintain stands and from the continued absence of native disturbances and ecosystem processes. Alternatively, management strategies that rely on passive restoration techniques, seeking to restore wildland fire to its former ecological role and maximizing the use of passive restoration techniques will better allow landscapes to respond to dynamic changes brought by restored ecological processes while reducing the economic overhead required to implement treatments and minimizing adverse impacts to landscape connectivity and watershed health stemming from expanded road networks and repeated stand entries (Agee 2002, Noss et al. 2006b).

While quantitative measures allow for easier comparison between alternatives, this measure falsely simplifies the differences between various alternatives on restoration goals - namely, Alternative E-Modified relies heavily on mechanical thinnings and commercial treatments to restore stand structure, with insufficient use of natural and prescribed fire, which results in a restored stand that lacks significant ecological processes that were characteristic of historic stands with frequent low-severity fire regimes. Acreage alone does not indicate which alternative will have the largest impact on landscape resiliency. Restoring stand conditions without restoring natural processes and disturbance events, especially fire, will fail to return the same ecological results as strategies that employ and promote natural fire regimes, and the different strategies employed by different management alternatives to restore dry forests will produce significantly different results. Neglecting to consider the qualitative differences between management alternatives on dry / moist forest restoration constitutes a failure to use best available science and to present scientifically accurate information for analysis.

Further, it is incongruous that the agency proposes to launch a veritable forest-wide armada of resource intensive logging thinning to purportedly ‘restore’ ‘presettlement’ resilience while at the same time dismissing the clear management opportunity to designate potential wilderness protective status to over 1.7 million acres of regional forest that already embody the agency’s purported goal of ‘presettlement’ resilience. Nowhere in the FEIS is this overt incongruent reality meaningfully disclosed and addressed, in violation of NEPA's reasonable, scientific, accuracy, disclosure, expert, and hard look analysis requirements.

C. Standards and guidelines

The FEIS does not include needed standards to ensure that ecological objectives are achieved during project implementation. Restoration techniques and strategies proposed for the alternatives analyzed in the FEIS will likely fail to achieve their stated ecological goals, specifically for recruiting and retaining both old forests and old, large-diameter trees across the landscape, due to likely discrepancies between the actions as analyzed versus the actions as implemented. Explicit, enforceable standards are required to ensure that management actions and restoration activities are implemented in alignment with how they were designed and analyzed. The discrepancy between actions as analyzed versus activities as implemented is especially severe in situations where short-term interests exert undue influence over management decisions at the expense of long-term ecological integrity. Such a situation is likely to arise frequently in the implementation of dry forest restoration activities, as economic constraints exert pressure to harvest large-diameter, high-value trees to cover treatment costs, thereby hindering the restoration of ecological functioning that such actions were implemented to achieve (DellaSala et al. 2013). Long-term recruitment and maintenance of large-diameter trees and old forests requires explicit standards to prevent the loss of these crucial ecosystem components when dry forest restoration activities employ commercial logging to reduce stand densities and treat fuels. At minimum, the FEIS must include explicit and enforceable guidelines, as well as including mandatory project implementation / validation monitoring and adaptive management regimes to modify management activities when conflicts occur between the effects of implementation and the project's ecological objectives. More importantly, the FEIS must avoid management actions which hold a high potential for adverse and unanticipated impacts, such as the use of logging to achieve dry forest restoration resulting in a further dearth of large-diameter trees and further reductions of ecosystem resiliency.

In analyzing the environmental impacts on old forests from Alternatives B, D, E, E-Modified, E-Modified Departure, and F: failing to provide old forest management areas will result in inadequate protection for these under-represented ecosystems. Guaranteeing adequate landscape-level distributions and abundances of old forests across forest types requires landscape-level planning, as specific stand-level projects lack the integration and scope necessary to ensure targets for old forest distribution across each national forest are met. Forest management planning at the stand-level will fail to provide for landscape-level corridors and patches of old forest, which occur at scales equaling and exceeding individual stands. While designing management alternatives that allow for dynamic landscapes comprised of shifting areas of early seral, mature, and old forest, the lack of concrete protections for dispersal corridors to create landscape-level connectivity and the potential for habitat fragmentation and negative associated impacts on population dynamics must be considered Furthermore, without explicit planning in place, stand-level management decisions will likely prioritize short-term economic returns, realized through logging in old forests and the harvest of large-diameter trees, over long-term recruitment and maintenance of old forests.

However, alternatives containing standards and guidelines that only provide protections for existing old forests will fail to provide adequate recruitment of future old forests as individual trees and patches succumb to mortality and disturbance. Specifically, in Alternative B, while guidelines that manage old growth where it occurs regardless of management area may better reflect the ecological reality of old growth distribution in space and time, a lack of clear management guidelines for maturing forest may lead to underrepresentation and under-recruitment of new old growth stands.

The lack of 21" screens and increased allowable sale quantities will likely lead to a decrease in large trees across the landscape, further aggravating the lack of high-value habitat conditions that are provided by old forests. As such, the quality of old forest across the landscape will be much degraded. The lack of enforceable standards will result in the overall failure to protect old forest or guide the recruitment and maintenance of old forest. Tables 319-321 (FEIS v2 pg210-1) over-represent the restoration impacts of Alternatives D, E, E-Modified, E-Modified Departure, and F, insofar as these alternatives prioritize logging and mechanical treatments as restoration strategies, which will lead to the harvest of large, merchantable timber to fund operations and will further limit the number and distribution of large trees and snags across the landscape, which represents a further departure from historical conditions. This is especially the case in moist forests, which did not solely exhibit OFSS structures, but also included OFMS structures that would be degraded by logging-thinning.

For Alternative E, E-Modified, and E-Modified Departure, replacing the 21" screen with an old-tree-characteristics screen will allow for the harvest of large mid-aged trees and potentially old-aged trees that do exhibit the characteristics as expected, which will further compound the lack of large trees across the landscape, and reduce the pool for near-term recruitment of old trees to maintain and establish old forest. The conservation of old trees is undoubtedly important, as trees gain unique form and structure with age and contribute important and under-represented habitat to old forests. However, the lack of 21" screens and increased allowable sale quantities will lead to a decrease in large trees across the landscape, further aggravating the lack of unique habitat types that are provided by old forests. The quality of old forest across the landscape will be much degraded with decreased functionality in regards to key habitat provision services. The ecological legacies of high-grade selection harvests have resulted in a dearth of large trees across the landscape. The maintenance of old trees that provide unique habitat values is certainly critical to securing high-value old forest habitat, but will not guarantee the recruitment of new, large-diameter trees to fill the niche left behind by single tree logging. Without specific standards or guidelines to protect large-diameter old trees, there is no guarantee that desired conditions, lacking clear monitoring and enforcement protocols, will be sufficient to maintain the required amount of old forest and large-diameter trees across the landscape.

The FEIS fails to disclose the science that resulted in the economically-based compromise of protecting trees over 21” dbh from logging. Arising from the Interior Columbia Basin Ecosystem Management Project, the majority of credible ecological science noted: 1 that trees greater than 15” to 16” dbh were present in deficient numbers and distribution across the forest landscape due to past and current logging; that old characteristic trees of all species were severely diminished in both numbers and distribution due to past and current logging; and that trees above 10 to 12” dbh evidence fire resistant resilient conditions. During this extended process, the majority of science-based recommendations called for a 15 to 16" dbh cutting limit, retention of trees greater than 10" to 12" dbh to retain fire resistant trees across the landscape (which would otherwise be replaced by fire prone brush and small diameter trees if removed by logging), and the retention of all mature and old characteristic trees no matter their diameter. (See ICBEMP EIS, BO, and related NEPA analysis and scientific research documentation in USFS archives). The failure of the FEIS to disclose this information while moving to rescind and replace the 21" dbh cutting limit deprives both the decision-maker and the public of critically relevant information, in violation of the NEPA. Further, the FEIS fails to provide cost estimates associated with enforcing the old tree conservation guideline it contains, fails to disclose and address the scientific recommendations of the ICBEMP, and therefore is both deficient and incomplete in effects analysis. As such, the agency has been unable to generate an acceptable legally compliant environmental impact assessment.

Across all proposed management alternatives, explicit standards are necessary to ensure the conservation and continued recruitment of old forests and large-diameter trees. While each alternative establishes desired conditions and objectives for management of old forests and large-diameter trees, the standards and guidelines that accompany each alternative will fail to result in achieving management objectives due to the lack of enforceable protection they would confer on old forests and large-diameter trees. The competing interest of logging in old forests and harvesting large-diameter trees in order to produce revenue to fund dry forest restoration activities stands in direct contradiction to the alleged goals of dry forest restoration. Management activities that use mechanical thinning and logging to meet dry forest restoration targets are more cost-intensive than management activities that use passive, processed-based restoration through fire, especially as mechanical actions and logging require repeat treatments whereas passive treatments through restoration of ecosystem processes may reach equilibrium and minimize resource requirements (Agee 2002, Noss et al. 2006b). As Alternatives B, D, E, E-Modified, E-Modified Departure, and F employ mechanical treatments as the primary strategy to meet dry forest restoration goals, the potential for conflicting interests in the implementation of restoration treatments is high, and the lack of strict and clearly enforceable standards to mitigate this conflict represents negligence to adequately assess the risks and impacts of each management alternative.

Without strict standards to conserve canopy trees based on diameter limits or age/old-growth characteristics, logging-'thinning' will unintentionally replicate the depletion of old forest, repeating the high-grading processes that degraded old forest during early settlement. Without specific standards to protect large-diameter old trees, there is no guarantee that desired conditions, lacking clear monitoring and enforcement protocols and opportunities through adaptive management to refine treatments, will be sufficient to maintain ecologically essential old forest and large-diameter trees across the landscape.

D. Developing and implementation management activities and restoration treatments

The FEIS is inadequate in its analysis of the cumulative environmental impacts of all management alternatives on forested vegetation and wildland fire, especially in regards to logging and silvicultural vegetation management.

In analyzing the environmental consequences of all management alternatives on forested vegetation and wildland fire (FEIS v1 pg251), the FEIS fails to include necessary information to determine the significance of pre-commercial thinning impacts on environmental conditions. Discussions surrounding the benefits of thinning on stand development must be explicitly tied to specific forest types / PVGs and the natural successional and developmental pathways that they evolved under. The applicability and ecological appropriateness of thinning treatments differ greatly between low elevation, fire-adapted ponderosa pine forests characterized by an uneven age distribution developed by spotty regeneration, and high elevation spruce-fir forests characterized by infrequent, high-severity wildfires that produce stand replacement disturbances and even-aged stand development. In failing to recognize the different successional pathways that different forest types evolved under, and the presettlement ecological conditions that would or would not be mimicked through mechanical thinning, this section lacks ecological nuance required to craft management plans that are ecologically appropriate and that are likely to result in the achievement of favorable stand conditions as dictated by HRV. Additionally, the frequently repeated assumption that the majority of silvicultural-based logging will occur in dry forests with few to no treatments occurring in high-elevation cold forests needs further proof through the inclusion of explicit logging limits and prohibitions to ensure that logging is implemented as analyzed within the FEIS. Logging-thinning actions designed for low-elevation dry forests are ecologically inappropriate in montane and subalpine forests in the cold PVG, and tangible protections beyond the casual assumptions used by the FEIS are needed. The failure to include tangible protections through standards or explicit logging prohibitions leads to a flawed FEIS.

In its assessment of the environmental impacts of commercial and intermediate thinning effects (FEIS v1 pg252-254), the FEIS does not differentiate its analysis to account for the impact of treatments across different forest types. Commercial thinning programs and standards – in the limited locations where such intrusive actions may be ecologically considered - must be explicitly formulated in reference to specific forest types and PVGs, to be ecologically appropriate and to avoid adverse impacts on forest ecosystem integrity. Revised analysis must address the numerous detrimental impacts of such programs, from their reliance on heavy machinery that destroys soil community and vegetative biodiversity, to the harmful impacts upon hydrological systems and wildlife, among others. Thinning programs generally have proven to impair forest ecological integrity and diminish natural biodiversity. If such programs are to be considered at all, they must be rigorously guided by conservation science relevant to localized site-specific conditions and characteristics to begin to be effective and ecologically appropriate. The FEIS fails to include information needed to assess the environmental impacts of pre-commercial, intermediate, and commercial logging-thinning activities across different forest types and cumulatively across the landscape, such as: the science-based strategies to be employed; the distribution of varied strategies across potential vegetation groups; and the spatial distribution of management strategies across affected units and adjoining eco-zones. The design and selection of different science-based strategies must be performed in explicit relationship to specific forest types and management goals in order for the environmental impacts of said management strategies to be adequately analyzed. The FEIS does not provide sufficient information to assess the impacts of the varied action strategies that may be employed to achieve management goals on forest integrity, ecological objectives, biodiversity, soil and water quality, and forest habitat, within each PVG. In failing to consider the differing effects arising from the potential actions employed to meet management objectives established within the planning process, the FEIS is insufficient to adequately analyze the environmental impacts of the proposed management alternatives. Furthermore, the FEIS fails to answer crucial analytical uncertainties, such as: will the acres the agency claims are suitable for timber production and those of its claimed allowable sale quantity differentiate between logging methods? How will the timber produced from commercial logging-thinning actions contribute to these figures? What type of logging actions will be applied, and what standards will be used to explicitly delineate the acceptable types of actions employed?

In analyzing the environmental consequences of clear-cut logging (FEIS v1 pg254-255), the FEIS states: "Even-aged regeneration treatments fit into the concept of emulation of natural disturbance as surrogates for severe or stand replacing disturbances." However, throughout the entire remainder of the FEIS, one of the primary stated purposes for developing new management alternatives is to increase forest resiliency in the face of climate change and evolving disturbance regimes, as current forests across all PVGs and within all national forests are forecasted to experience severe disturbances with high to complete mortality. The FEIS has stated that severe disturbances, especially in terms of severe wildfire in dry and moist forests and severe insect and disease outbreaks in dry, moist, and cold forests is beyond the HRV levels that should be expected. If future mortality is expected to exceed the levels desired by managers, then there should be an excess of early-seral ecosystems and young even-aged stands across the landscape, which negates the Forest-Service's claimed "need" to emulate natural severe disturbances through clearcutting. Additionally, due to past decades of harmful clear-cut logging, there already exist a clear over-abundance of such forest types. As such, the Forest Service's claimed "need" for such clear-cut logging violates the reasonableness and accurate scientific requirements of the NEPA.

Forests that experience severe mortality naturally through wildfire or insects provide higher-value habitat post-disturbance for wildlife due to the retention of legacy structures such as snags and woody debris, enhancing the quality of developing early-seral ecosystems and increasing resiliency. When the forecast for forest conditions across the Blue Mountains suggests that there will be an excess of natural mortality, which will produce high-value early-seral habitat through the heterogeneity resultant of natural disturbance events, the agency's supposed "need" for homogenized, low-value early-seral habitats resulting from clear-cut types of logging is proven to be naught but a fallacious fabrication, rendering the inclusion of such claims in the FEIS in violation of the NEPA. Finally, the many detrimental ecological impacts of clearcutting extend beyond logging alone, including with the construction and maintenance of road systems, the compaction of soils and degradation of site productivity, the potential for erosion and sedimentation, the loss of coarse woody debris and carbon stocks, and the introduction and spread of noxious weeds. These known harmful impacts concretely demonstrate that the high level of ecological degradation involved with even-aged management is unacceptable anywhere within the public forest landscape. The FEIS only provides two paragraphs in analyzing the effects of clear-cut types of logging (euphemized as "regeneration harvests"), which fails to address any of the aforementioned points and reflects a failure to conduct due diligence to avoid adverse impacts.

Analyses of predicted impacts from management alternatives must consider stochastic disturbances in perpetuating young forest (SI/SE) across the landscape from stand mortality and forest development. Insofar as young stands deterministically develop towards older forests, and older forests are stochastically reverted to SI stages following stand-replacement disturbances characteristic of montane & subalpine cold forests, analyses must account for the inevitable loss of old forests and creation of young forests, and provide for reserves of old forests. To be consistent with science, the agency must plan for significantly reduced logging and anthropogenic management disturbances. Pre-emptively, clearcutting and related types of logging must be halted in advance of the forecasted increase in early seral ecosystems resulting from insect and severe wildfire disturbances. Mature forests must be allowed to naturally recruit towards old-growth to maximize the distribution of old forests in high elevation locations in advance of future losses. Failure to include the recognition that early-seral ecosystems are forecasted to increase due to severe disturbance events, clearly expressed throughout the FEIS, in explaining the need for clearcutting and even-aged harvests to guarantee early-seral ecosystems across the landscape, has resulted in a failure to meet the requirements of NEPA and NFMA.

In addition to extensive known harms and the clear lack of 'need' for clear-cut and related logging based on the predicted increase in SI/SE forest stages, even-aged regeneration treatments that require planting are especially inappropriate if increasing forest resiliency is a primary desired outcome of the management plan. Artificial plantings decrease genetic diversity at stand-, watershed-, and landscape-scales. Planting from stock selects against genotypes that can maximize tree health under adverse circumstances, instead promoting genotypes that exhibit rapid tree growth under ideal circumstances, which may likely be ill-equipped to cope with increased water stress and decreased site productivity associated with climate change. Allowing for natural regeneration of genotypes that are present on-site will preserve a range of genotypic diversity in-situ, which is critical for preparing forests to respond to future stressors, both predicted and unforeseen, stemming from climatic changes. Allowing for natural regeneration will also provide for population- and landscape-level evolution of genotypes within and across tree species, which is crucial for conserving the genetic components that forests require to express resiliency and adaptability on the century-scale. Management actions must be site appropriate for maintaining and increasing stand resiliency. Actions that do not allow for natural regeneration are inappropriate as dictated by site conditions, species assemblages on site, or seasonality, and must be reassessed if safeguarding forest ecological integrity and ecosystem resilience is a priority of the management plan. The FEIS clearly fails in this regard.

Management activities that seek to remove large-diameter trees to achieve agency targets are in direct contravention with credible science, and thus in violation of both the NEPA and the NFMA. Agency planning requires extreme clarity on the ecological objectives and natural site-specific species composition. More importantly, extreme prejudice is required to differentiate between site classes and potential vegetation groups – and, therefore, to identify the natural vegetation of the site and determine whether shade-tolerant trees occur naturally on-site or are have invaded since fire suppression – at a resolution more precise than merely classifying stands as dry, mixed, or cold forest. When old, large-diameter trees of mixed species composition and shade tolerance (such as Douglas-fir and grand fir) are targeted for harvest in an attempt to "restore" dry ponderosa pine forests, it is self-evident that such stands are being pushed away from their historic composition towards a novel species assemblage. The presence of large-diameter, old trees of mixed shade tolerance necessarily indicates such a site belongs to a more mesic and productive site class than dry forest, and thus dry forest restoration treatments are inappropriate insofar as the site did not express dry forest characteristics prior to European settlement and does not require restoration.

The FEIS acknowledges, "the most productive soils occur in valleys and basins where soils are often deep and have high water-holding capacity due to their increased volcanic ash content," (FEIS v2 pg105). However, the FEIS does not translate this recognition of the fine-scale patterning of site productivity, and therefore potential vegetation grouping, into the coarse partitioning of the landscape into dry, moist, and cold forests, and the associated desired conditions and management treatments implied by each classification. Nuance is necessary in discriminating between dry forests and mesic forests, especially as one increases in elevation, trends towards N and E aspects, trends towards sheltered valley positions, or on sites with ashy soil. Historical records reveal a complex mosaic of dry and mesic upland forests, which can be lost through indiscriminate restoration activities that attempt to convert all low-elevation forests to open ponderosa pine woodlands, regardless of site productivity (Schoennagel et al. 2004).

It is absolutely crucial that accurate site classification techniques are used to assess stands and the native forest vegetation they naturally support. Misapplication of supposed "desired conditions" and management actions to misclassified stands will cause irreparable harm to the specific stand individually through the destruction of habitat towards a novel state, and to the landscape collectively through the reduction of heterogeneity and beta- and gamma-diversity. Negative ecological impacts stemming from the misclassification of stands and the misapplication of management treatments is a given as the FEIS currently stands, due to coarse classifications of forests into PVGs without any site-specific assessments or standardized classification methodologies. The FEIS must mandate individual site-specific visits and accurate assessments before the development of management plans. Further, the content and classification strategies associated with site assessments must be included for analysis within the FEIS to adequately gauge the environmental impacts associated. Moreover, the content and classification strategies used to designate stands as dry, moist, or cold must be specifically tailored to reflect clear regional topographic and climatic gradients within the Blue Mountains planning area (Heyerdahl et al. 2001). The accuracy of site classification programs are absolutely crucial to adequately assessing the current state of Blue Mountains forests, to comparing the differences between current and historic landscapes and assessing the degree of departure, and to developing desired conditions and management goals and implementation management actions and restoration treatments. Failure to include the requisite nuance and scientific accuracy to conduct site classification at the scale require represents a violation of standard scientific practices and a minimization of adverse ecological impacts, **all in clear violation of the NFMA and NEPA.**

In addition to the imminent dangers of misapplying management actions to improperly classified stands to meet purported restoration goals that are inappropriate for the site, restoration strategies rely almost exclusively on timber harvests and mechanical treatments to meet restoration goals. The prevalence of logging and mechanical harvests as a keystone element of restoration strategies heightens the risk that restoration treatments, as depicted and designed in the FEIS, will produce adverse environmental impacts through the misclassification of stands and misapplication of restoration goals, leading to the implementation of inappropriate and heavy-handed restoration techniques and resulting in environmental degradation by shifting forests to novel structures and compositions that are representative of neither presettlement conditions nor the natural ecological compositions of the affected area – thus defeating the agency's stated purpose.

The FEIS neglects to adequately consider alternative strategies to address stand densities and fuel levels in dry forests, when appropriate to the sites' productivity and natural vegetation conditions, outside of relying on active management via logging, thinnings, and mechanical actions. The FEIS fails to fully consider and analyze the range of possible management alternatives to reduce fuel levels and restore stand structures in dry and mixed forests using prescribed burning and wildland fire without mechanical thinning. Additionally, the agency's prior "fuels-reduction" logging-thinning have amassed house-sized piles of logging slash debris – highly flammable kindling – across the region's forests. These have undermined the agency's very rationale for such project actions, resulting in increased risk of high-intensity fires across the affected and adjoining areas. Economically, there exists no viable incentive for logging companies to remove these slash piles, as such costs are far more than any gain they might achieve. As a consequence, these huge piles sit throughout the region's forests, ticking time bombs of high fuel loads waiting for their inevitable contribution to unnatural fire severity levels, as naturally such piles did not exist. Yet the FEIS fails utterly to meaningfully and accurately address this common failure of logging-thinning to even begin to address fire concerns, in blatant violation of the NEPA.

The FEIS does not acknowledge scientific evidence demonstrating the ability to restore dry forest conditions using fire alone in assessing the potential strategies to meet the management goal of dry forest restoration (DellaSala et al. 2003, Noss et al. 2006a, Noss et al. 2006b). The FEIS does not recognize the body of research that suggests restoration and fuel reduction targets are more effectively achieved through passive management with the natural fire regime, than through active management with mechanical non-commercial fuel treatments, due to the relative efficacy and ease of implementation of the former (Agee 2002, Noss et al. 2006a). Passive management through the natural fire regime provides increased heterogeneity and increases the habitat value of restored dry and moist forests, as compared to mechanical thinnings and logging, while providing ecosystem functions such as nutrient cycling and mineral seedbed preparation that are not achieved through mechanical fuel reductions (Fule et al. 2004, Schoennagel et al. 2004, Reinhardt et al. 2008). The failure to consider non-mechanical strategies for achieving restoration goals exhibits that the FEIS is capricious and arbitrary in its diagnosis that management alternatives which maximize the use of logging and mechanical harvests as restoration treatments will result in more resilient forests as compared to management alternatives which minimize logging, instead prioritizing prescribed and wildland fire as restoration treatments. This capricious and arbitrary assessment of the relative viability of mechanical harvests versus fire in achieving restoration goals is present in the assumption that Alternative C will do less to shift dry forests towards desired conditions than other alternatives, due to the lower levels of active management expected under this alternative. This capricious and arbitrary assessment that mechanical harvests will best achieve restoration goals is also used to analyze the impacts of logging alternatives on reducing stand densities and shifting species assemblages towards shade-intolerant species. However, the FEIS does not consider that logging is not the only available mechanism to halt succession in dry forest environments, and often proves to be more resource-intensive than passive management strategies such as prescribed wildland fire (Fule et al. 2004, Noss et al. 2006a). Therefore, the FEIS is scientifically inaccurate and misleading in its overemphasis of the restoration impacts resulting from alternatives that employ logging and mechanical activities, and its understatement of the restoration impacts resulting from alternatives that use passive management through fire and natural disturbances. **Such biased, scientifically unfounded analysis violates the NEPA.**

The FEIS lacks scientific integrity insofar as it is misleading and scientifically inaccurate in depicting Alternatives D, E, E-Modified, E-Modified Departure, and F as having larger impacts on achieving restoration goals and restoring ecosystem resiliency than Alternative C. As Alternatives D, E, E-Modified, E-Modified Departure, and F decrease the use of fire across the landscape as compared to Alternative C, it is an unsubstantiated assumption that the former alternatives will prove to have more success in limiting regeneration of shade tolerant species than Alternative C and in restoring ecosystem functioning and resilience to dry forests. "Alternative C would rely mainly on the use of fire (planned and unplanned ignitions) to reduce stand densities. Rather than logging trees to reduce densities, trees would be thinned by fire under Alternative C. However, due to the high percent of the landscape in closed stand densities and the potential for very high levels of mortality and high severity fire effects to other resources such as soils, the window or time frame under which fire could and would be managed to achieve the desired conditions for stand densities, structural stages, and species composition would be limited based on current conditions and the inability to reintroduce fire to meet low severity fire effects." (FEIS v2 pg216). The FEIS contends that "Alternative C would likely result in increased fire severity, decreased ecological resiliency, and loss of key ecosystem components and functions due to scope and scale of fire severity outside that which historically occurred within the dry upland forest potential vegetation group," (FEIS v2 pg216). Alternative C is interpreted by the FEIS as possessing a low likelihood of success in achieving desired stand densities, structural stages, and species compositions precisely because this alternative minimizes active management via logging and the reliance on wildland fire to achieve resource objectives, instead maximizing passive restoration through the reintroduction of wildland fire to achieve resource objectives. In contending that Alternative C will result in increased fire severity and decreased resiliency, the FEIS fails to acknowledge significant scientific debate over potential strategies to manage wildland fire to lower stand densities and manage species compositions in dry forests (Agee 2002, Noss et al. 2006a). The FEIS also overemphasizes the potential for active management through logging and mechanical actions to decrease fire severity and increase resiliency, even in the dry forests that these treatments are allegedly tailored for.

Equally, the FEIS emphasizes the impacts of Alternatives D, E, E-Modified, E-Modified Departure, and F in achieving desired conditions of forest stand density and species compositions in dry forests, due to the increased number of acres subject to active management in the form of logging activities under these alternatives. However, Alternative D specifically seeks to minimize wildland fire across the landscape and replace many of fire's impacts on creating and maintaining open stand structures in dry forests with active mechanical methods. Alternative D makes no indication of seeking to restore the landscape level keystone role that wildland fire played in creating and maintaining ecosystems through the presettlement fire regime. Alternatives E, E-Modified, E-Modified Departure, and F do make use of prescribed fire, but at levels below Alternative C, and far below the historical extent of fire in the Blue Mountains.

Restoration strategies that do not employ wildland fire will fail to confer the expected resiliency onto treated stands insofar as the ecological functions of fire cannot be replaced with mechanical treatments, and the reduced use of fire across the landscape under Alternatives D, E, E-Modified, E-Modified Departure, and F will result in less restored resiliency than the FEIS depicts. NEPA is clear in its directives that the agency must accurately disclose applicable science and may not bias or stilt its analysis, misleading the decision-maker and the public towards a preconceived logging alternative as it has clearly done in this FEIS, both by its omissions and by its misrepresentations as noted herein.

Broadly, the FEIS fails to adequately recognize scientific evidence concerning ecologically significant differences between dry forest restoration techniques that employ fire versus those that rely solely on mechanical actions. Namely, fire contributes to soil heating and nutrient cycling, consumes litter and duff, provides mineral soil seedbeds for regeneration, creates high-value heterogeneous habitat mosaics, and alters community composition and structure (Brown et al. 2004, Kauffman 2004), whereas mechanical fuel reduction treatments do not contribute to these processes. The ecological roles played by fire regimes of varying severities are acknowledged in the FEIS (v2 pg208-9), though the FEIS does not clarify that mechanical fuel reductions through logging-thinnings and crushing do not replicate these ecological roles (Wimberly et al. 2009), and frequently conflates the environmental impacts of restoration strategies that use fire versus restoration strategies that rely solely on mechanical treatments to restore dry forests. The FEIS consistently ignores these ecologically significant differences when analyzing the environmental impacts associated with different management alternatives on restoration and resiliency in dry and moist forests. For example, Table 120 depicts the estimated annual acres of active forest management activities treated annually under each alternative, by national forest (FEIS v1 pg265), but fails to differentiate between restoration activities that use fire versus purported ‘restoration’ activities that rely solely on mechanical actions, instead only comparing the quantitative number of acres treated by alternative rather than the per-acre and landscape-level qualitative differences produced by different management activities associated with each alternative. In failing to acknowledge scientific evidence demonstrating the significant ecological roles played by fire and how those roles are not replicated through mechanical actions, and in conflating the ecological impacts of mechanical fuel reductions with prescribed fire fuel reductions, the FEIS demonstrates a failure to use best available science and to adequately and accurately present the management alternatives available.

The FEIS is inadequate of its assessment of the cumulative environmental impacts on watershed functioning from dry forest management activities associated with different alternatives. The FEIS does not fully consider the hydrological impacts stemming from the expansion of road networks, from soil compaction associated with repeat stand entries, and from the potential spread of noxious invasives associated with disturbance from mechanical logging and related actions.

In comparing the watershed impacts of the management alternatives, the agency fails to analyze indicators beyond merely the quantitative number of acres affected per alternative. Rather, the FEIS must consider the qualitative impacts of different techniques on watershed functioning, which vary by management alternative, with Alternative C emphasizing wildland fire while all other alternatives emphasize logging and mechanical actions, which fail to replicate the critical ecological functioning of fire. The FEIS acknowledges that fire performs and enables crucial ecosystem processes and functions (v2 pg208-9), but does not acknowledge that such processes and functions are not replicable through logging or mechanical activities in dry forests (Reinhardt et al. 2008). In comparing pure quantitative measures, such as miles of road treatments or acres of dry forest actions, without acknowledging that the type, location, and methods of activity produce significantly different results qualitatively, the FEIS presents misleading information for analysis.

Additionally, the FEIS must consider the external impacts of restoration programs for each alternative: specifically, the reliance on mechanical thinning and logging to conduct purported 'restoration' operations requires the construction and maintenance of extensive road systems, and repeated stand entries every 5-10 years to maintain opened stand densities and reduced fuel loads. The FEIS entirely neglects to consider the environmental impacts of such a road system and series of frequent stand entries on soil compaction, erosion, runoff and hydrological connectivity, fragmentation, the introduction and dispersal of noxious weeds, and the potential for non-point pollution (DellaSala et al. 2013, Kalies and Kent 2016): all of which have significant environmental impacts on watershed health, but are wholly ignored from analysis by the FEIS. To this effect, the FEIS presents inaccurate and misleading information about the alleged ecological benefits for watershed restoration under Alternatives B, D, E, E-Modified, E-Modified Departure, and F.

The FEIS does not adequately include consideration of strategies alternative to repeated logging management for dry forest restoration that may better achieve restoration goals while reducing the aforementioned negative impacts, namely employing wildland fire to accomplish resource objectives. These ecological impacts can all be circumvented by maximizing the use of wildland fire over mechanical actions to maintain fire-adapted dry forests, and by minimizing repeat stand entry and decommissioning roads. Further, removal of biomass from site through logging results in a removal of crucial nutrients from the site, which would otherwise be available through organic decomposition or through burning. Evidence points to nutrient stress in low-elevation dry forests being as significant of a limiting factor in tree development as moisture stress, and management activities that remove nutrients from a site and disrupt ecosystem processes such as frequent, low-severity burns that are critical in nutrient cycling will have an adverse impact on stand development, growth of residual trees, and forest health and resiliency.

Moreover, the degree to which mechanical logging-thinning without prescribed fire will restore resilience and ecosystem functioning to dry upland forests, and by extension, to the resiliency and functioning of watersheds containing dry upland forests, is not just doubtful, it is well-disproven. There are many direct and indirect impacts of burning that are not directly replaceable with mechanical logging-thinning. Moreover, repeated stand entries to maintain "restored" stands will further compact soil, reducing site productivity and aggregating erosion, and will fail to restore landscape processes that are vital to resilient ecosystems.

Table 121 (FEIS v1 pg267) similarly contributes to an oversimplified and superficial analysis of the impact of management alternatives on the Blue Mountains environment, in this case on watershed restoration. The number of miles of road treatments under each alternative misrepresents the alternatives' impacts on watershed health via road impacts. Alternatives D, E, E-Modified, E-Modified Departure, and F will require a larger road system to achieve the harvest and restoration treatment goals they have established, and simultaneously allow for the significant amounts of motorized use across the forest. While Alternative D has the largest number of road treatment miles, this does not imply that Alternative D will have the greatest benefit for watershed health.

As clearly demonstrated herein, the FEIS and ROD fail numerous requirements of the NEPA. If implemented, the management actions would violate the NFMA, CWA, ESA, and other environmental policy laws and directives.

Proposed Solution: Withdraw the FEIS and ROD, and conduct a Supplemental EIS that addresses the many legal, analysis, and scientific deficiencies and discrepancies noted herein, and that complies with the letter and intent of both NEPA and NFMA and this nation's additional environmental policy laws.

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FOREST ECOLOGY ASSUMPTIONS OBJECTIONS BY DR. CHAD HANSON

Dr. Chad Hanson is a renowned scientist whose work focuses on forest and fire ecology and the wildlife species that depend upon post-fire habitat. Dr. Hanson earned a Law Degree from the University of Oregon, a Ph.D. with a concentration in ecology from University of California at Davis, and a B.S. from UCLA. He has authored or co-authored 32 peer-reviewed publications, and has three additional publications currently in review. He has also co-authored seven books and book chapters. Dr. Hanson's research publications include papers such as "*Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States?*" and "*Examining historical and current mixed-severity fire regimes in ponderosa pine and mixed-conifer forests of western North America*". In 2015 he co-edited and authored several chapters in the book *The Ecological Importance of Mixed-Severity Fires: Nature's Phoenix*. Dr. Hanson is the director and principle ecologist at the John Muir Institute.

Dr. Hanson has extensive expertise on fire-related issues in Oregon and the western US. He prepared the following statements for BMBP's objection in response to the BMFPR FEIS:

There are numerous, serious inaccuracies, misrepresentations, omissions, and unsupported conclusory statements in the FEIS regarding historical forest density and fire regimes relative to current conditions. For example:

1: The FEIS, Vol. 2, p. 122, cites to Stine et al. (2014) for the proposition that current forests in the Blue Mountains are 2.5 times denser than historical forests, in terms of trees per acre. However, this assumption, stated on p. 108 of Stine et al. (2014), was based on a group of studies that were recently found to have severely underestimated historical forest density (by at least twofold to threefold) due to improper exclusion of key data and failure to correct for well-documented underestimations in forest density (which were acknowledged by the Forest Service in multiple reports in the early 20th century) in historical US Forest Service surveys used as the basis for these studies (Baker and Hanson 2017, Baker et al. 2018).

2: The FEIS cites in numerous places to Johnston (2016), but that study attempted to reconstruct historical forest density by using current forests and then determining how many of the current trees were alive in the historical reference time period based on their size and age. However, this approach necessarily excludes the countless trees that lived during the historical reference period, but which died due to age, fire, or drought and native bark beetles, and which fell and decayed into soil long before the field sampling of current forests was conducted (see, e.g., Baker and Hanson 2017). Thus, this approach is guaranteed to substantially underestimate historical forest density.

3: The FEIS, on pp. 249-250 of Vol. 1 and elsewhere, cites to Hessburg et al. (2016) for the assumption that the historical forest density and fire regime reconstructions of Williams and Baker, based on 19th century General Land Office field data, are not reliable or accurate and can be disregarded. This is strongly contradicted by the empirical scientific evidence, which establishes a very high level of accuracy of these data, based on the most extensive accuracy-checking and cross-validation in the history of fire ecology, including: 20 modern validations with plot data; 47 specific historical cross-validations in small areas; six large areas with general cross-validations; 99 corroborating observations from scientific studies; and general corroboration from seven paleo-reconstructions (Baker et al. 2018).

4: On p. 249 of Vol. 1, the FEIS cites Haugo et al. (2015) as evidence about historical reference conditions. However, this study was merely a modeling exercise, entirely based on the assumptions of the authors, and did not present any empirical or historical data on actual forest conditions in the Blue Mountains prior to logging and fire suppression. The only empirical evidence, based on actual field data from the 19th century, is presented in Williams and Baker (2012), which has been exhaustively accuracy-checked and cross-validated, as noted above, and which establishes a wide variation in stand densities in the historical Blue Mountains, as forests were shaped by mixed-intensity fire—with significant levels of moderate/high-intensity fire. Historical forests were 2-3 times denser on average than assumed by Stine et al. (2014).

Further, when John C. Fremont and his team, including Kit Carson, explored the Blue Mountains in 1845, Fremont's journals frequently described forest conditions. Below, in order, are quotes pertaining to all of his descriptions of forest density and structure (generally, tree size) in the Blue Mountains (journal excerpts attached to these comments):

Page 540: "…the country is covered with nutritious grasses and dense forestland…"

Page 540: "…the timber exhibits a luxuriance of growth unknown to the eastern part of the continent…"

Page 542: "From the summit here, the whole horizon shows high mountains…and on the left, from south around by the west to north, the mountains are black with pines; while, through the remaining space to the eastward, they are bald with the exception of some scattered trees…"

Page 542: "You will remark that we are now entering a region where all the elevated parts are covered with dense and heavy forests."

Page 543: "It is probable that they have received their name of the Blue moutitains [sic] from the dark-blue appearance given to them by the pines."

Page 544: "On either side, the mountains here are densely covered with tall and handsome trees; and, mingled with the green of a variety of pines…"

Page 546: "There are some pines here on the low hills at the creek; and in the northwest corner of the Rond is a very heavy body of timber, which descends into the plain."

Page 546: "Passing through a point of pines…in which the trees were sometimes apparently 200 feet high and 3 to 7 feet in diameter…"

Page 546: "Resuming our journey, we commenced the ascent of the mountain through an open pine forest of large and stately trees…"

Page 547: "…continuing our route among the pines, which were more dense than yesterday, and still retained their magnificent size."

Page 547: "After a few miles we ceased to see any pines…These trees appeared from 60 to nearly 200 feet in height; the usual circumference being 10 to 12 feet, and in the pines sometimes 21 feet."

Page 547-548: "After travelling occasionally through open places in the forest, we were obliged to cut a way through a dense body of timber, from which we emerged on an open mountain side…"

Page 548: "We continued to travel through the forest, in which the road was rendered difficult by fallen trunks, and obstructed by many small trees, which it was necessary to cut down…A laborious day, which had advanced us only six miles…"

Page 548: [the following day] "The trail passed sometimes through very thick young timber, in which there was much cutting to be done; but, after travelling a few miles, the mountains became more bald…"

Page 548: "On our right was a mountain plateau, covered with a dense forest; and to the westward, immediately below us, was the great Nez Perce (pierced nose) prairie, in which dark lines of timber indicated the course of many affluents…"

Page 549: "…descending a bad ravine, into which we drove our animals, and had much trouble with them, in a very close growth of small pines."

Page 549: "After cutting through two thick bodies of timber…the forest became more open…The pines here were 11 or 12 feet in circumference…"

The full text of Fremont's observations during his travels through the Blue Mountains can be found at:

http://www.archive.org/stream/expeditionsofjoh01fr/expeditionsofjoh01fr_djvu.txt

From these journal notes, of approximately 18 references to forest density, 12 of them (67%) describe dense/heavy/dark/thick/close forests versus 6 pertaining to open/bald conditions. In approximately half of the locations in which dominant tree size is discussed, the trees were small, while large overstory trees dominated in other locations. These notes indicate highly variable historical forest conditions, contrary to the relatively homogeneous conditions that the Scoping Notice assumes to have occurred. Moreover, Fremont's descriptions are generally consistent with the findings of Williams and Baker (2012), based on late 19th century General Land Office field data, of highly variable forests—with many medium to high density areas—dominated by mixed-severity fire effects, not by low-severity fire (40% of forests were characterized by low-severity fire effects, while 60% were characterized by mixed/high-severity fire).

5: The FEIS (Vol. 1, p. 251) misrepresents Haugo et al. (2015), inaccurately claiming that, according to that study, the "vast majority [of forests in the Blue Mountains] will need either active intervention or a combination of active intervention followed by additional successional development to return to some semblance of natural forest structural conditions." However, Haugo et al. (2015) only claimed that 38% of the National Forest forestland is outside of the natural range of variation—not the "vast majority"—and the authors clearly stated that this 38% could be brought into the natural range through fire and natural succession alone. Specifically, all three categories analyzed by the authors—Disturbance only, Disturbance then succession, and Succession only—can include *either* some form of forest management or natural processes like fire (i.e., without any logging).

6: The FEIS's tables presenting the Forest Service's claims regarding the historical range of variability in stand conditions (e.g., p. 194, Vol. 1, and p. 112 of Vol. 2) are not supported by citations to any scientific studies and, therefore, appear to simply represent the Forest Service's assumptions.

7: Nowhere does the FEIS's sections regarding natural range of variability, resilience, or desired conditions meaningfully acknowledge the unique wildlife habitat created by high-intensity fire or patches of high snag recruitment from cycles of drought and native bark beetles—a habitat type known as "snag forest habitat", or more technically as "complex early seral forest" (DellaSala et al. 2014). Many native wildlife species depend upon this important and distinct forest habitat type, which current science concludes is comparable to old forest in terms of native biodiversity and wildlife abundance (DellaSala et al. 2014, DellaSala and Hanson 2015). Instead, the FEIS, Vol. 1, p. 254, and elsewhere, erroneously claims that various forms of clearcutting "emulat[e]" the habitat conditions created by patches of high-intensity fire, but no citations to scientific sources are offered to support this claim. Current science clearly concludes that snag forest habitat, or complex early seral forest (CESF), is defined by an abundance of snags, downed logs, patches of native shrubs and forbs, and natural regeneration of conifers and hardwoods, and that even-aged logging does not ecologically mimic this habitat (Swanson et al. 2011, DellaSala et al. 2014) for the simple and obvious reason that clearcutting and its variants remove all or nearly all of the trees, and typically remove shrubs through mastication or herbicides. In fact, over 50% of the plant and animal forest species are either partially or predominantly associated with this "naturally regenerating early-seral" habitat (Swanson et al. 2014). This is a significant issue, particularly due to the fact that current Blue Mountains forests have a significant deficit of high-severity fire relative to natural historical levels (Baker 2015), along with a deficit of low/moderate-severity fire too (Baker 2017).

8: The FEIS's description of "ecological resilience" (Vol. 1, p. 249) is lacking in that it fails to discuss the fact that ecological resilience (as opposed to engineering resilience, which has nothing to do with biodiversity) requires natural disturbance processes, operating within the natural range of variability, creating the full range of habitat types and successional stages and thus providing ample habitat for the complete complement of native biodiversity (Thompson et al. 2009). Ecological resilience is not the suppression of natural disturbance processes; nor is clearcutting forests, and erroneously conflating clearcuts and snag forest habitat as "stand initiation" (e.g., Vol. 2, p. 112), consistent with the science on ecological resilience.

9: The FEIS presents misleading information on post-fire conifer regeneration in high-intensity fire areas, citing Chambers et al. (2016) and Savage and Mast (2005) for the proposition that high-intensity fire leads to conversion to non-forest (FEIS, Vol. 1, p. 249). However, the results of these studies are not consistent with that characterization. For instance, even though Chambers and Mast (2005) reported that, in some larger high-intensity fire patches at more than two decades post-fire, ground cover was predominantly comprised of shrubs, grasses, non-conifer trees, they also reported natural post-fire conifer regeneration in these areas at levels consistent with their characterization of historical tree densities, and they reported moderate to high levels of natural conifer regeneration in most high-intensity fire areas. Similarly, Chambers et al. (2016) reported levels of natural post-fire conifer regeneration in many high-intensity fire areas that were higher than the levels of historical tree density claimed to have occurred by Stine et al. (2014), upon which the FEIS repeatedly relies, and natural conifer regeneration of about 20/acre even in the interior areas of the largest high-intensity fire patches (this is within the natural range of variation of tree densities claimed by Stine et al. 2014). Further, Chambers et al. (2016) does not account for the fact that, in deeper interior areas of larger high-intensity fire patches (which comprise a small percentage of high-severity fire patches, which themselves only comprise a portion of a given fire), much of the natural post-fire conifer regeneration does not occur until 17-25 years post-fire (Haire and McGarigal 2010). Most of the data collection in Chambers et al. 2016 occurred in earlier post-fire years than this.

10: The FEIS baldly misrepresents current high-severity fire occurrence relative to historical occurrence. In Vol. 2, p. 197, the FEIS reports the natural range of variation with regard to the percentage of fire behavior that was comprised by high-severity fire in historical forests, expressed as a range. In many forest types, the range reported is 20-80%, 40-80%, or 30-100% high-severity fire, while one, dry upland forest (which the FEIS claims comprised the majority of the forests historically—see Table 313), is reported as 5-15% high-severity fire. Then, on p. 198 of Vol. 2, the FEIS, based on Table 315, claims that there is a serious problem ostensibly because about 50% of the dry upland forests (fire regime I) have the "potential" for high-severity fire under the most extreme fire weather. The FEIS claims that dry upland forests must be extensively logged ostensibly based on the comparison between 5-15% and 50-55%, but does not disclose the fact that dry upland forests in the Blue Mountains are not, in fact, experiencing 50% high-severity fire currently. Nor does the FEIS provide information about actual current high-severity fire percentages in this forest types.

11: The FEIS repeatedly claims that increased logging, including clearcutting, will somehow curb fire behavior, but does not disclose the fact that the most comprehensive analysis ever conducted on this issue found that increased logging results in higher, not lower, fire severity (Bradley et al. 2016).

12: The FEIS in multiple locations claims that post-fire logging and tree plantation establishment reduces future fire severity, but offers no scientific citations to support this statement, which is flatly contradicted by empirical science (Thompson et al. 2007).

13: The FEIS repeatedly bases conclusions about higher fire intensity potential on the Fire Regime Condition Class concept (i.e., the assumption that long-unburned forests will burn unnaturally severely), but offers no empirical evidence to support this claim, and ignores empirical studies that consistently find it is incorrect (Odion and Hanson 2006, 2008, van Wagtendonk et al. 2012, Miller et al. 2012).

BMBP OBJECTIONS TO THE SUMMARY OF THE FINAL EIS FOR THE MALHEUR, UMATILLA, AND WALLOWA WHITMAN NATIONAL FORESTS LAND MANAGEMENT PLANS[11]

I. Objections to "Significant Issues" Section

Page 10

- [Significant Issues] No wildlife as significant issues. No fish & water quality as significant issues.

II. Objections to "Alternatives" Section

Page 12 (Alternative C)

- [Alternative C, access] Try to get back that 500,000 acres of Wilderness!

- [Socio-economics] Get back the smaller annual timber sale volume and reduced livestock grazing.

Page 13 (Alternative C)

- [Grazing] Get back classification of riparian areas & subwatersheds with listed fish habitat as unsuitable for cattle, reduction in sheep for Bighorn sheep.

- [Old Forest] Get back 390,000 acres in MA 4C old forest and only noncommercial thinning up to 8" dbh

- [Old Forest] Get back the comprehensive 21" dbh limit

- [Wilderness] Get 505,600 acres of recommended additions and wilderness

- [Ecological Resilience] Get emphasizing the role of natural processes.

- [Ecological Resilience] Get back more aquatic restoration (not via logging).

Page 15 (Alternative E)

- [Access] 203 mmbf = more than double the current high & completely unsustainable yearly timber sale volume of 79 million board feet – see AHA socio-economics on p. 10

- [Socio-economics] Both of these are higher under the selected modified Att. E

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[11] Each objection is identified as a separate bullet. The bracketed text at the beginning of each objection identifies the section/paragraph/location on each page that objection is referring to.

- [Old Forest] This would be very little reduction from current destructive levels of AUMs, 239,800 cattle and sheep AUMs= more than double current 95,000 AUMs under Att. E which is also completely unsustainable livestock devastation—see Att. E p. 12 Socioeconomics. Current level is 224,000 for cattle AUM plus 18,800 for Sheep AUMs—see ATT. A p. 11—224,000 – 18,800 = 242,800 = unsustainable.

Page 16 (Alternative E)

- [Ecological Resilience] "Restoration" = mostly commercial logging

Page 16 (Alternative E-Modified)

- [Alternative E-modified (Preferred alternative)] Scraps Infish/Pacfish

Page 17 (Alternative E-Modified)

- [Grazing] Reject the inclusion of vacant allotments in the suitable land base for grazing.

- [Grazing] Get the grazing levels down below current levels as with Alt. C or less

- [Old Forest] Get back the designation (and expansion) of Old Forest management areas, without noncommercial thinning to 8" as with Alt. C

- [Wilderness] Get Alt. C level (or better) of recommended wilderness.

- [Wilderness, left margin] Only 70,500 acres proposed for Wilderness as compared to 500,000 acres under Alt. C! This is the only chance to get more wilderness protection, the highest level of protection for fish, wildlife, water quality, soils, carbon sequestration, recreation, etc.

- [Ecological Resilience] Problems with the modification of Alt. E compared to Alt. E

Page 18 (Alternative F)

- [Alternative F] Better than Alt. E, but not as good as Alt. C.

Page 19 (Alternative F)

- [Socio-economics] Livestock grazing AUMs are far too high.

- [Wilderness] Not enough wilderness recommended

OBJECTIONS TO PROPOSED REVISED MALHEUR NATIONAL FOREST LAND MANAGEMENT PLAN[12]

NOTE: The Design Criteria (i.e, the Standards and Guidelines) are identical across all three Revised Forest Plans, although not all of the criteria apply to all three of the Forests. Because the criteria are the same, the Objections identified below to the criteria included in the Malheur Proposed Revised Forest Plan apply with equal weigh to those same criteria to the extent that they are incorporated into the Umatilla and Wallowa-Whitman Proposed Revised Forest Plans.

I. Objections to "Species Diversity" Section

Page 38

- [Top of page/through all of right margin] All the original MIS should still be MIS, not just focal species or eliminated from even that, as with Martin and primary cavity excavating woodpeckers. This list (table 2) also defies NFMA guidance to use listed species as MIS, which should include terrestrial MIS like Gray wolf and Canada lynx as well as species likely to be uplisted and rare, such as wolverine, Columbia spotted frog, and American marten as well as greater sage grouse. Focal species have no enforcement teeth under NFMA, and so would likely be extirpated over time if rare, a candidate for ESA listing, already federally listed, or ranked as vulnerable. Federally listed species not monitored as MIS would likely go extinct. It is not acceptable or legal for a Forest Plan to write off species by degrading their protective status.

Page 39

- [Top of page/through all of right margin] There's a heavy bias in the Forest Plan(s) revision to not giving species adapted to denser forest conditions any route to protected status, monitoring, or recovery (e.g. Marten, N goshawk) unless they are cash generators (elk) and against keystone predators, including gray wolf, Canada lynx, wolverine, and American marten. Any species that could be problematic to protect re: increasing the status; no timber sale volume is arbitrarily dismissed as to MIS and for monitoring. For instance, Gray Wolf and Canada Lynx are keystone species and federally listed and should thus be MIS under NFMA. Beaver are obvious keystone species that should be a MIS for aquatic restoration. Marten were already designated MIS by the Forest Service for these Forests, as were primary cavity excavators. Greater sage grouse are an obvious sagebrush obligate and a good MIS for sagebrush steppe, but that could conflict with national forest livestock allotments, so isn't considered.

- [Paragraph 4] Why are low levels—any levels—of non-native species predatory, interbreeding, or competing—included as part of the desired condition.

[12] Each objection is identified as a separate bullet. The bracketed text at the beginning of each objection identifies the section/paragraph/location on each page that objection is referring to.

II. Objections to "Federally Listed Species" Section

Page 39

- [1.3 Federally listed species, Background] None of this is being done now—why should we believe it will be done when TES species (terrestrial) are not even considered for MIS & monitoring?

- [1.3 Federally listed species, Existing Condition] So where in this Forest Plan Revision is the required "focused protection and restoration strategy designed to recover [specific] listed species?"

Page 40

- [Desired Condition] So why is more livestock grazing planned when it is in direct conflict with wolf recovery? Where are suggested and mandated specific changes in management to facilitate conservation and protection of TESC species (terrestrial) on the Malheur?

Page 41

- [Scale] So is the Forest Service required to initiate these species recovery plans or not?

III. Objections to the "Invasive Species" Section

Page 47

- [Desired Condition] The desired condition should not include "desired" non-native animal and plant communities as this implies the National Forests are "desired" (by the Forest Service, not the general public") to be in an unnatural (non-native) state, although exotic species are known to be extremely problematic for retaining healthy, native, resilient plant and animal communities, natural ecological processes and food webs, biological diversity, and ecological integrity in general.

IV. Objections to "Structural Stages" Section

Page 47

- [Existing condition] Since "in many areas, there has been a net loss of larger and older structural stages" in the Blues Mountains, it would not be consistent with HRV goals, stated desired conditions, or the purpose and need of the Forest Plan revision to return to logging elimination of existing, already scarce large trees by scrapping the Eastside screens 21" dbh limit without any credible science justification and to scrap the Old Forest management area designation and protections.

Page 49

- [Top of page/first paragraph] So since structural classes in shrubland have shifted toward higher levels of older plants due to fire exclusion and livestock grazing (p. 49), how is it consistent with ecological resiliency & sustainability goals (purpose & need) to increase livestock grazing, continue widespread fuel reduction (a form of fire suppression) and continue wildfire suppression?

- [Second paragraph, continuing to third and fourth (desired condition and scale)] How is planned logging removal of large diameter trees that decreases suitable habitat for management indicator species. (Pileated woodpecker, Marten, primary cavity excavators), TESC species (listed fish re pools, cover, sensitive Pacific fisher etc.) and leads to fewer stands resistant to wildfire—consistent with the purpose and need of creating "conditions that are ecologically resilient, and compatible with natural levels of disturbance"? (p. 49)

- [Desired Condition] Increasing livestock use will not result in this Desired Condition, based on decades of past failure of livestock use achieving restoration goals, meeting RMOs, or achieving balanced shrubland structural stages that are sustainable.

V. Objections to "Plant Species Composition" Section

Page 50

- [Top of page] Re: inadequate and misleading analysis in the Forest plan revision

- [1.7 Plant Species Composition, Frosted Vegetation Background, top and left margin throughout] Interesting that there is no discussion of large-scale pine bark beetle, Mt. Pine beetle and pine butterfly outbreaks in dry Ponderosa pine dominant stands and lodge pole pine stands, while shade-tolerant species are vilified as if only they are vulnerable to insect defoliators, root rot, etc.

- [End of first Forest Vegetation Background paragraph] Actually much of the increase in insect defoliation in dry forest is species specific to pines and there may be no Grand fir present.

- [End of second Forest Vegetation Background paragraph] What specific data from what exact location and baseline time period went into this unnamed model?

- [Existing Condition] There was also significant logging removal of large and old grand fir and engelmann spruce in monster mixed conifer forest where these were the natural overstory the species, but this is not mentioned re: the loss of large and old tree structure or re: the historical abundance of grand fir late seral conditions and how that relates to the increase in Grand fir where it may be growing back in from past Grand fir overstory and large tree removal.

- [Bottom of page] How would more livestock grazing suddenly not have the effects of in-growth of more small dense trees, introduction of invasive species, loss of aspen sprouts, loss of riparian hardwoods, conifer encroachment on meadows and sage steppe etc.?

Page 51

- [Desired Condition first paragraph] Re: Inaccurate use of the science

- [Desired Condition first paragraph] What is the scientific basis for Table 7 "Desired Conditions" for species composition of trees percentages? Does the Forest Service suddenly have data for pre-European contact baseline conditions (what HRV is supposed to represent) or do these percentages reflect continued conversion of the species composition to timber industry preferred tree species, regardless of the much higher historical abundance (percentage) of shade-tolerant dominant species especially in moist forest and likely also in cold forest, and to some extent in intermediate mixed conifer?

- [Table 7] Only 10-30 % of shade-tolerant species—Grand fir, engelmann spruce & subalpine fir does not match historic reality or past logging removal percentages of these species in moist forest. This is very obvious on the ground with historic large Grand fir structure–live, snag, and log-remaining and large old growth Grand fir log decks in moist forest, that were not removed due to rot or partial loads. Loggers also admit past heavy removal of old growth Grand fir.

- [Desired Condition second paragraph] How could the Forest Service ever attain this original condition of grass and shrubs with continued status quo livestock grazing, let alone increased livestock grazing and opening of vacant allotments to renewed livestock use? We've seen no evidence of landscape scale significantly improved grass and shrub conditions so far—especially not on the Malheur! Witness the highly degraded conditions of most current allotments—e.g. Blue Dollar and in the Flat Sale area.

Page 52

- [Grazing Land Vegetation Background] "Most" of the 72% of rangeland and 19% of forest grazing land being strongly or completely departed from historic reference conditions (pre-livestock use) due to [heavy?] extensive livestock use predating the Malheur National Forest is cause for concern and immediate shift away from current high livestock use levels in that for decades, these lands have still not recovered due to Forest Service management, so current use levels and livestock management are not working and the land needs very long rest from livestock—in many cases, elimination of livestock use, to fully recover, not increased livestock use as planned, under the same management. Rest works as passive restoration (continued livestock use in C or D phase means no real recovery.

- [Table 8] Why are phases A + B combined? Why are phases C + D combined? It is important for the public disclosure to know just how much of these lands are moderately departed (B), strongly departed (C), and completely departed (altered) from historic natural conditions due to livestock use.

- [Bottom margin] It really doesn't matter if most of the strongly and completely departed forest grass land and "range conditions pre-date from livestock use predating the Malheur Forest as it still has to be restored.

Page 53

- [Existing Condition] With 72% of Forest rangeland and 19% of forest grazing land being phase C or D—strongly departed or completely departed from reference conditions at current levels of livestock use, it is not likely at all (not foreseeable) that planned increases in livestock use, or current levels will ever reach the desired condition on Malheur Forest Plan p. 53 of having "an array of nature species distributed across the landscape reflecting historical conditions"

- [Desired Condition] There really shouldn't be any "desired non-native plant composition and cover on National Forests. This implies planting and perpetuation of non-native grasses just for cattle and sheep—i.e. for private profit.

- [Desired Condition] *Inaccurate use of the science* Re: Last part on stand density using canopy closure as a surrogate for stand density results in logging elimination of naturally denser moist mixed conifer forest supporting wildlife dependent on greater canopy cover, which may have sustainable density.

- [Second Desired Condition paragraph] These desired conditions obviously can't be attained with continued and increased livestock use in phase C + D (strongly and completed departed) areas—that's 72% of the Forest rangeland and 19% of the Forest grazing land. Nothing has worked to attain RMOs except prolonged rest from livestock, complete exclusion of livestock from severely damaged areas. Cattle and sheep are exotic invasive species and should be understood and managed as such.

VI. Objections to "Stand Density" Section

- [1.8 Stand Density Background left margin] This stand density discussion completely neglects many natural stand-thinning processes.

- [1.8 Stand Density Background bottom of first paragraph] Greater biomass density ("fuels") does not necessarily correlate w/ greater potential for severe wildfire, as wildfire is largely driven by weather, humidity levels and ambient air temperature, not by fuels. Moist dense mixed conifer forest often only sustains spot fires due to higher moisture retention and cooler micro-climate conditions, whereas I've seen fires burn at stand replacement severity across clear-cuts and forests heavily thinned and with widely spaced trees (e.g. plantations).

Page 54

- [Stand density background continued] What detailed ground examinations? The Forest service seems to be basing most their timber sale planning on remote (satellite!) sensing rather than on needed groundtruthing. This should be changed with this for this plan revision (in all three forests) as it leaves the great inaccuracies in forest habitat destruction especially in more clothes canopy moist mixed conifer which can sustain higher tree densities and is more open below the overstory canopy when in an old growth state making the use of canopy cover as a surrogate for stand density misleading and an inaccurate use of the science.

- [End of Stand Density Background paragraph] 40% canopy cover in dry Ponderosa Pine Forest is not really high density as Natural old growth P. Pine equals usually 30 to 50% canopy closure. Likewise 60% canopy cover is very normal and natural for moist and cold forest types-associated species such as pileated woodpecker in Northern goshawk need at <u>least</u> 60% canopy cover to have security from predators (pileated) during nesting or from competitors for prey and for fledgling security and nesting security (N. goshawk).

- [Desired Condition] So far increased logging has only exacerbated the undesirable conditions of stand uniformity and ingrowth of dense small flammable trees so increasing logging of mature and large trees is inconsistent with the purpose and need and meeting desired conditions.

- [Desired Condition] The HRV analysis used for this Malheur Forest plan resulted in a very Broad overgeneralization in that the Malheur has much more mixed Conifer warm dry and cool moist Forest on the ground based on historical evidence such as large old-growth live firs, old-growth fir snaps and logs and old growth fir stumps and old growth fir log decks (with the logs not removed) than would be accounted for if the Malheur was historically 80 to 90 percent open stand density dry forest. This is a serious fundamental error in the forest plan and recent logging management that would and has resulted in creating extremely sterile, open hot conditions while the existing trees are mostly young not old growth that's also unlikely many moist or cold forest was open (see par. 2, p. 54).

<u>Page 55</u>

- [Top of page, above table 9, down the right margin] The Malheur needs to stop using 40% canopy cover for dry forest and 60% canopy cover for moist and cold Forest types as a surrogate for unsustainable stand density (i.e. re; competition for water) or high “fuel loading” for fire risk or for an insect thinning trigger as this ignores the reality that these forest types naturally attain and sustain these levels of canopy cover and ignores the need to allow for natural mortality to happen to create snags and logs for wildlife diversity and microhabitat conditions for plants (e.g. fungi and logs). This fails to allow for topographical and moisture regime variability on a site-specific and microclimate level which determines (along with soil type & soil nutrients) stand productivity capacity (which is not determined by canopy closure). The net result of recent and current logging in the Malheur based on this stand density index scheme (basically based on only one or two science papers is to open the forest to unnaturally low levels of basal area for mostly young (overlapped) forest, drying out microclimate conditions, eliminating a lot of natural variability and effectively sterilizing the forest, greatly reducing biodiversity and in some cases, water retention.

- [Left of table 9] It was likely far more dry forest historically at 40% canopy cover or greater than 5 to 20% especially for young stands which these now are.

VII. Objections to "Water Quality" Section

<u>Page 58</u>

- [Existing conditions] The forest service has been directly responsible for most of these degraded water quality conditions including logging elevating stream temperatures intentional FS removal of instream wood in the 1960's and 1970's; harmful artificial weirs; and all of the following impacts from livestock use; elevated stream temperatures; increased fire settlement changes in channel morphology, alteration and loss of riparian plants, and fecal matter contamination; as well as following impacts from forest service planned road construction: increased and continuing fine sediment loading, loss of floodplain.

VIII. Objections to "Landscape Patterns" Section

<u>Page 60</u>

- [Existing conditions] How can wildfires be judged as larger in more severe and creating an uncharacteristic landscape pattern outside the natural range of variation (i.e. historic condition) based on the baseline for natural patterns being 1986? Inaccurate use of the science. HRV is supposed to be based on pre-European settlement conditions (HRV is historic range of variability)

- [Existing conditions, second paragraph] Given that uncharacteristic landscape patterns mostly occur in landscapes actively managed (i.e. logged, grazed by livestock, etc.) and least in unmanaged wilderness how would increased logging and livestock use planned move landscape patterns closer to the desired condition? Increased management is inconsistent with many ethological restoration related purpose and need statements and desire conditions expressed in the forest plan.

<u>Page 61</u>

- [Top and left margin of page] Recent and ongoing for a service logging in the Malheur is completely catastrophic to the desired condition of allowing for historical landscape patterns, processes and dynamics (as the logging aim is to reduce fire risk and as wildfire suppression is still a major priority of forest service work during the fire seasons in the Malheur.) Forest service is also actively logging Wildlife connectivity corridors removing cover and security for species vulnerable to predation and human hunting (elk and deer) as well as for species that need to migrate safely especially under severe climate change such as Marten, Pacific Fisher, Canada Lynx, Wolverine and aquatic or riparian species. The Malheur Forest service is also still actively homogenizing the forest on a landscape scale by perpetuating plantations and continuing to log mature trees past the point of no return leaving an unnaturally large area of all young trees and very heavily logged open areas.

IX. Objections to "Special Plant Habitats" Section

Page 61

- [1.13 Special Plant Habitats Background, second paragraph] What happened to consideration of special habitat for sensitive plants and for wetlands, seeps, springs, and fens?

- [Desired Condition] The Forest Service seems only interested in special habitats where logging is seen as improving the situation as with Aspen, Mt. Mahogany & Sagebrush steppe.

- [Bottom of paragraph] Apparently it's inconvenient to protect rare plants and riparian areas.

- [Scale] The Malheur Forest Service has also long been ignoring our concerns re the fine-grained complexity of transition zones between moist and dry forest (see last par. p. 60) and logging these important biodiverse areas heavily to make them into their stereotype of dry forest. Why should we expect anything different under this Forest Plan? There's no detailed plans or standards to back up the desired condition rhetoric for changes in management.

- [Scale, second paragraph] Scale switching again

- [1.13.1 Whitebark Pine Background] This is generally true of most trees in general.

X. Objections to "Old Forest and Individual Old/Large Trees" Section

Page 65

- [Background, third paragraph] Re: the need to retain large trees > 21" dbh—support (science) in the Forest Plan –Need to retain 21" dbh logging limit, which is the demarcation for "large" trees currently and based on the science.

Page 66

- [Existing condition] This is nothing short of bizarre. How can the Malheur be over-represented in the total amount of old moist forest structure? Old and flies over a hundred and fifty years old so historically there before heavy logging in the Malheur. "Moist" is an innate ecological condition for a forest type the forest certainly hasn't grown moister to the management! Obviously there's no over representation of old forest--a lot of old moist forest on the Malheur and the other two Forest has been logged into younger stages not just the dry forest.

- [Existing condition, end of paragraph] This is inaccurate use of the science to justify logging in moist old forest despite it being with HRV.

- [Desired conditions, above and below paragraph] As usual there is no disclosure as to the baseline data used to determine HRV, which is supposed to be based on pre-European colonization conditions.

- [Desired Conditions] Loopholes to allow continued logging of old forest and large trees.

XI. Objections to "Snags and Down Wood" Section

Page 66

- [1.15 Snags and Down Wood, Background] This is basically the same as in the Umatilla forest plan.

Page 67

- [Background] There's a huge NEPA problem that we were not able to comment on any of this detail in the current Forest plans as it didn't exist in the Draft Forest plan out for comment there was no detailed analysis in the Draft Forest plan like this it was incredibly vague and skimpy. So this is all new material and rationales on which we were never able to comment. This makes all this new analysis very problematic unless we can all agree that there needs to be a comment period on this before an objection period. Almost all of this is new information and far more detailed information than was in the small one volume Draft Forest plan for all three forests.

- [Background, third paragraph on 67] What HRV data for post-fire habitat was used? Based on what year of baseline data for where?

- [Third Existing Condition Paragraph] Where the most clearcutting has taken place, as planned by the Forest Service.

Page 68

- [Table 12] This may not be based on and hard ecological sciences but simply on the Forest Service desire to continue to do "fuel reduction" logging (heavy logging) across the Forests as a way to justify more heavy logging through people's fear of fire.

- [Table 12, Caption] "Desired" by the Forest Service

- [Table 13] Unmanaged never logged forest often has much higher snag numbers per acre than Forest plan standards. These are very high percentages of less than one snag per acre per Forest type compared to what we see in the field in never logged forest or forest that has not been logged in a long time. This looks biased to allow for heavy logging reduction of potential future snacks. Moist upland forest after has 6-10 snags per acre over 17" DBH. Dry upland forest after has at least 1-6 snags per acre >17" dbh, based on our old growth counts when not logged or hardly logged. Desired snag levels should be higher, and better match natural unlogged conditions. How is this based on DECAID? For what level of woodpecker tolerance? Only 30%? Also DECAID was not intended to ensure species viability.

Page 69

- [Table 14] Although table 14 seems more comparable to our field surveying experience (for snags > 20" dbh), the dry forest estimate is conspicuously low at 70-80% having less than 1 snag >20" dbh per acre. We usually find at least 1-3 snags > 17" dbh (often >20") per acre in dry forest unless it was heavily logged recently, thus losing "hazard tree" snags. This is a low for dry forest, especially for a desired condition.

- [Table 15] Notably there is no science citation for such a bizarre concept as a "desired proportion" of post-fire habitat. How can this possibly be determined? Especially as we logged post fire habitat is now at a deficit compared to historical conditions, based on recent science.

- [Table 15] Source for these percentages for table 15?

- [Bottom Margin of page] Boreal owl? Pileated woodpecker? Woodduck? Bald eagle? Red-naped sapsucker? Not really, based on my experience. Science supporting this for these species?

XII. Objections to "Goal 2: Promote Well-Being" Section

<u>Page 71</u>

- [Top of page 71, 2.1 Scenery, Background] Why is there no clear distinction made within the Forest Plan itself to guide management for each scenic class and suggest improved management to more areas from less desirable scenic classes (e.g. 5, 6, 7) to more desirable (e.g. 1, 2 or 3) why are scenic classes 6 & 7 labeled as "Not applicable"? Do these include scenic integrity losses from potential future extreme energy extraction? (e.g. oil and gas development) If so, they should be defined and given a current percentage and goals of keeping them low or "not applicable".

- [Table 16, 2.1 Scenery, Background] People referring to the Forest Plan for management direction (including agency managers, reviewing agencies and the public) should not have to find or FOIA outside sources for fundamental definitions. (see ref. to the "scenery management handbook" p. 71)

- [Page 71 end of final paragraph for 2.1 Scenery, Background] Logging ("timber harvest") and livestock grazing are not just past risks to scenic stability, but ongoing glaring degradations to scenic and recreational values since the 1980s.

- [2.1.1 Scenic Integrity and Scenic Stability, second paragraph] Large stand replacing wildfires are not necessarily "uncharacteristic" witness the big burn "encompassing multiple states around 1910, prior to fire suppression, and many other historic large stand replacing wildfires. These shouldn't and can't be fully suppressed (see "existing condition risks to scenic stability—wildfire suppression… above p. 71) and are natural and inevitable aspects of the scenery in fire ecology dependent ecosystems such as the Blue Mountains forests, so need to be accepted.

- [Scenic Integrity Level within the Blue Mountains] "Feathered or "blended" edges are overrated by the Forest Service. Clear-cuts and other heavily logged areas still look awful and unnatural.

- [Bottom Margin] Why is "high" scenic integrity not defined?

Page 72

- [Top Margin] This is all very vague and pointless with no real DFC goals

- [Top Margin] There's no specified acreage or percentage of the landscape to meet these scenic classes so scenic call 1 could get whittled down to virtually no acreage

- [End of first paragraph on page 72] Large scale wildfires and insects and diseases are natural elements of forest views.

- [Desired conditions] What is scenic stability vs. scenic integrity? This is wide open to subjective interpretation. How is scenic stability determined?

- [Table 17] How is table 17 in any way useful for management direction?

- [Scenic class 1, Scale] Why are scenic classes 2 and 3 lumped together? What are the differences between them?

- [Scenic classes 2 and 3, Scale] Why are scenic classes 4, 5, 6, and 7 lumped together? What are the differences between them?

Page 78, 2.3.1 Rocky Mountain Elk

- [Existing conditions] Re: the need to continue to protect not only large, but mature "medium dbh trees" (15-20" dbh) from logging.

- [Existing conditions, second paragraph] First admission of the decline in 15-20' dbh trees specifically that I've seen.

Page 79, 2.3.1 Rocky Mountain Elk

- [Top margin] The Malheur is currently rapidly eliminating elk security and (for deer) through huge landscape scale heavy logging timber sales very low basal areas that also target wildlife connectivity corridors for logging.

- [Second sentence, first paragraph, page 79] This needs to stop in order to retain elk and elk hunting. There is also a decline in deer on the Malheur (as well as on the Deschutes), indication that more retention of thermal and hiding cover is needed. As current and recent timber sales have created more forage for deer and elk, that is not the problem. Clear lines of visibility for hunters and a lack of winter and summer thermal cover are.

- [Below table 18] Elk security areas are much less on the Malheur than on the Umatilla—which is 606,888 acres, 43% of national forest, 336,632 acres excluding wilderness and 24 percent of the national forest, excluding wilderness. Yet reasons for the difference are not addressed which are in part due to more designated wilderness on the Umatilla which indicates a need for much more wilderness to be designated on the Malheur and in part due to more moist mixed conifer in the Umatilla and currently heavy logging on the Malheur to very low basal areas and failure to establish a more restrictive travel management plan so far. This indicates a need for more restricted motorized uses and no logging of moist mixed conifer and connectivity.

- [Left Margin of page 79] This translates to the need for standards for the Malheur that require no more commercial logging of connectivity and moist mixed conifer, and logging retaining more thermal and hiding cover, more wilderness fall protection of all existing eligible roadless areas as wilderness and a much more restrictive plan with more road decommissioning.

- [Last paragraph re: Desired Conditions] Desired conditions per se do not "provide sustainable] and resilient habitat for elk"—instead there needs to be detailed planning, enforceable standards, benchmarks for objective attainment monitoring, and well defined goals with timelines to reconcile all these confliction pressure on elk viability with continued elk viability desired conditions. The forest plans for the 3 Forests are exceptionally weak re: guiding and mandating attainment of desired conditions.

<u>Page 80, 2.3.1 Rocky Mountain Elk</u>

- [Generally] The forest plans fail to specify ways to attain these desired conditions for elk "consistent with other desired conditions and management area direction" as they offer no way to resolve conflicts between conflicting desired conditions and selected alternative management direction. For instance, "studies have demonstrated elk avoidance of cattle during summer (Malheur FP p. 79) Yet a desired condition for elk is for them to be "broadly distributed on spring/summer/fall habitat generally from April through November "and for elk habitat to provide "a balanced juxtaposition of adequate nutritional resources for elk during summer and (MFP p. 80) even though the alternative would open up now vacant cattle allotments and increase the number of cattle on the 3 forests creating more forage competition for elk, deer, pronghorn, and bighorn sheep, moving elk further from this desired condition. Likewise, continued new road building and no apparent road density requirements would further disturb elk, and increased logging would remove more hiding and thermal cover for elk—including on big game winter range (see paragraph 7 above).

- [End of fourth complete paragraph, page 80] With increased logging already targeting winter ranges (e.g. the current Cliff Knox sale on the Malheur

<u>Page 82, 2.4 Cultural Resources</u>

- [End of Desired Condition] They should be managed for full protection from avoidable human-caused impacts, not just “managed”

<u>Page 83, 2.5 Roads and Trails Access</u>

- [Top margin] Forest plan arguments (likely common to all 3 plans) for closing and decommissioning most FS roads and not continuing to construct new roads as planned (supporting our argument to greatly reducing roads and road use.)

- [Existing Conditions, third paragraph] We have heard that the Malheur and Wallowa Whitman travel management plans (both of which were fairly good) have been put on hold pending Forest Plan revision.

- [Existing Conditions, fifth paragraph] Re: Our support for our arguments for full road decommissioning, not just (usually inadequate) road closures.

<u>Page 84, 2.5 Roads and Trails Access</u>

- [Bullets] Motorized cross-country travel has: (bracket around text)

- [Desired condition] Storing roads for long term use which are not currently funded for adequate maintenance makes no sense as 1) funding for maintaining such road is not likely to increase and 2) the existing road bed will become overgrown and blocked and should instead be fully decommissioned as need so as not to continue to be used, not continue to contribute excess sediment to water ways and not continue to provide access for illegal firewood cutting, for detrimental fur trapping (especially of rare and listed species) and for damaging livestock and ATVs—especially so most closures are ineffective.

- [Desired condition, end of second paragraph] Mt. bikes need to be prohibited in wilderness areas, proposed wilderness and roadless areas as disturbing wildlife and a conflicting use with are goals.

- [Desired condition, end of third paragraph] No road density limits are specified—even for elk, listed gray wolf, and other disturbance-sensitive species like wolverine.

- [Desired condition, end of fourth paragraph] All back country needs to be non-motorized at this point.

- [Desired condition, fifth paragraph] All IRAs, RNAs, botanical areas should not have motorized use.

<u>Page 85, 2.5 Roads and Trails Access</u>

- [General] The forest plan needs to address the need for restrictions on trail density in roadless areas and proposed or designated wilderness connective loops often tend to result in greater wildlife disturbance. The plans should also address the need to avoid user conflicts through separate trails (e.g. hiker vs. horseback riding vs. motorized bikes) and to clearly keep bicycles and other vehicles on and at proposed wilderness and IRAs.

- [Left margin] There needs to be distinctions made between wildland urban interface in naturally open forest (PP dominant) dry forest zones and naturally denser cold (lodge pole pine) and moist mixed conifer zones where cut and burned areas are likely to come back as hugely flammable dense young lodgepole pine or mixed conifer and which are harder to maintain.

- [2.6 Wildland-urban interface, background, end of first paragraph] Many of these community wildfire protection plans have been overly extensive, to the point where there is no real "wildland" distinction as with the all-encompassing Grant County CWP plan, which takes in virtually all of the county. There should also be a clear definition (based on acceptant/fill time resident density) of "urban" as sometime the Forest service is only protection a few buildings in an inholding owned by only one entity (as is the case of the Willoughby current timber sale on the north fork John Day district of the Umatilla, where almost every inch of the full block (thousands of acres) of adjacent public forest would undergo commercial logging or noncommercial thinning for one private property.

- [2.6 Wildland-urban interface, background, second paragraph] In practice, logging to theoretically reduce fire rick trumps all other uses and concerns in Forest Service practice in wildland urban interface declared zones—to the point where the local communities likely have sharply reduced aesthetic quality of life.

- [Bottom margin] The FS has legal mandates to protect wildlife, not prevent or reduce wildfire.

Page 88, 2.9 Community Resilience

- [Top margin] Again, the forest plan(s) fail to link the existing condition to the desired condition by devising and sort of detailed plan and standards that would help alleviate current lack of community resilience – e.g. by stopping the overlogging and overgrazing (by livestock) of the forests and contributing to economic diversification in rural communities by jointly trying other approaches.

- [first paragraph] NEPA; inconsistency with purpose and need for the Forest Plan revisions

- [third paragraph] So how would the Forest Service remedy this problem? Not by increasing timber sale volume and livestock grazing as planned.

- [Existing condition] So the trend of mills shutting down suggests lack of sustainability for recent and current Forest service logging, as the forests are already grossly overlogged, with a great decline in the size of trees available to log and greater movement of the FS into formerly protect areas (Roadless areas, wild and scenic river corridors, designated wolf growth habitat, critical habitat for rare and declining species, riparian buffers, popular areas, recreation where logging is contested on valid legal grounds. Major timber corporations have seen this trend and moved out of the area (Crown pacific, Louisiana pacific and to a large extent Boise Cascade so why does the FS plan to increase logging volume by doubling it or more, when it's clear the industry is declining in the area and that current logging levels, places, and targets are unsustainable?)

- [Existing condition, end of first paragraph] Saw log logging does not contribute to community sustainability, but to boom-bust economic and social crisis.

- [Existing condition, end of second paragraph] Yet the FS ignores many of us with attachments and local knowledge.

Page 89, 2.10 Wild Horses

- [Top Margin] We are opposed to BLM's and Forest Service's recent plans to extirpate wild horses over time through getting them off the land to low, unviable population numbers that would not retain enough genetic diversity, and through mass sterilization (permanent).

- [Scale] We want wild horse viability and management to be considered separately from livestock as "other approved multiple uses" in that livestock are much more ecologically damaging to other natural values than the wild horses and are run for private profit on public lands with overall greatly diminished plant diversity, water quality, riparian areas, etc. as a result, whereas wild horses are part of the public lands heritage. Impacts from both livestock and wild horses to forage for wild native ungulates need to be considered, but livestock are far more numerous and more competing with native ungulates, and some ranchers have been the biggest lobbyists for getting rid of the wild horses. Wild horses are often blamed for impacts from cattle or sheep.

- [Background, end of first paragraph] There should be standards to ensure viable wild horse herds re: numbers and genetic diversity, not just a wild horse herd.

- [Existing Condition, end of first paragraph] There should be requirements to use best available science in wild horse management and to respect the public opinion that wild horses should persist and be humanely treated in accordance with the Wild Horse and Burro Act.

- [Left margin] In Nevada, which has far more wild horses than Oregon years ago, a BLM rep said 97% of the forage use was from domestic livestock, only 3% from wildlife, and so little from wild horses that he threw them in with wildlife. Wild Horses are not in the Umatilla Plan, as they don't exist there.

- [Goal 3: Promote Economic Well-being] "Stable and improving habitat conditions" as the desired condition ignores the severe impacts of cattle and sheep compared to the minimal wild horse effects and the need to maintain viable herds.

Page 92, 3.3 Goods and Services and 3.3.1 Forest Products

- Timber volume on the Malheur was declining because of unsustainable past and current logging that was increasingly violation environmental protection laws and eliminating lost ecological protection zones that were set aside for good reasons—to protect last large intact blocks of wildlife habitat for far-ranging keystone predators in roadless access, to protect wild and scenic river values, riparian areas and fish and diminishing large trees.

- [Third whole paragraph] The current accelerated scale of logging (which is not restoration) is completely unsustainable on the ground let alone an increased volume. We field survey timber sales on the Malheur every year and the saw log extraction component (most of it) is devastating. Some parts of the Malheur are no longer recognizable to locals and no longer exhibit forest structural integrity or enough wildlife habitat suitable for density and greater moisture or shade dependent species, both wildlife and plants. The very low basal area tree retention norm is making the forest hotter and drier with large areas of bare ground—especially in combination with over-grazing by livestock. This does not set up the forest for greater resiliency, but less.

- [3.3.1 Forest Products, Background, end of second paragraph] The forest plan fails to acknowledge over-logging of mature and large trees planned by the Forest Service as reason for Malheur declines—including for Ponderosa pine.

Page 93, 3.3.1 Forest Products

- [Generally] The Forest Plan also fails to acknowledge the reasons for E. OR declines in sawmills production, manufacturing with wood, and plywood and veneer processing being related to unsustainable long-term overlogging across Eastern OR by the Forest Service and the timber industry. The Forest Service also fails to acknowledge their role in perpetuations a boom/bust economy re: timber-related businesses in Easter Oregon and how they are now setting up local communities in E. OR for an even bigger economic and social bust by planning to increase logging volume on the Blue Mountains forests beyond its current unsustainable level. The rotation pace of coming back to the same forest area to log again is ridiculously short and unsustainable even by timber industry standards, as the average tree size cut commercially now is only 10 to 11 dbh as opposed to the standard industry minimum of 16" dbh and we've witnessed the FS coming back the same sale area they logged before as recently as 9-14 years ago, and more often within the last 27 years that I've been field surveying FS timber sales since 1993 on the Malheur and since 1991 on the Umatilla. No logging rotation that is that fast can maintain ecological integrity or viable habitat for the full complement of native wildlife species. There needs to be a Forest Plan decision to decrease logging—at least to Alt. C levels.

- [Generally] All 3 Forests need to monitor and regulate mushroom gathering.

- [Generally] All the logging of commercial size-trees (i.e. timber harvest) done so far has degraded most wildlife habitat (except for with Aspen), has decreased ecological resilience, and has not reduced impacts from insect and disease susceptibility. The small tree thinning (<8-9" dbh by hand). However, can be beneficial, provides jobs, and does not require the mills. A shift in focus from logging as usual is needed.

- [Second whole paragraph] Nothing about the current timber sales is really “affordable”

- [Third whole paragraph] In the face of diminishing saw log availability, why is this “desired?

- [Desired Condition, first paragraph] Delete this broad rationale for logging lands unsuitable for timber production!

- [Desired Condition, third paragraph] Biomass for energy contributes to climate change if not used locally in energy efficient ways (e.g. pellets)

<u>Page 94, 3.3.2 Livestock Grazing</u>

- [Top of page, down left margin] Combined restrictions for ESA—listed fish runs (salmon, steelhead, bull trout, cutthroat trout) and INFISH/PACFISH were all that really saved still existing fish runs. INFISH/PACFISH restrictions, RMOs, and no logging buffers are still badly needed to achieve full recovery of fish run which is still not in sight. The aquatic restoration strategy lacks enforceable standards to ensure desired conditions and INFISH/PACFISH RMOs will be met. ESA recovery plans also need to be guaranteed through enforceable standards for terrestrial listed species, including Gray Wolf, Canada Lynx, and greater sage grouse and candidate and vulnerable ranked or rare sensitive species such as wolverine, American marten, pacific fisher, and Columbia spotted frog as well as mollusks and rare plants.

- [First whole paragraph] The vast majority of riparian areas are still not meeting riparian management objectives, grazing standards and full recovery conditions “signs of recovery” and “improvement” are minimal at best, and not enough to recover historic aquatic species ranges or even ensure the species long-term viability.

- [Second whole paragraph] Permitted numbers and seasons of use of livestock need to decline much more to meet RMOs, not increase.

- [Desired Conditions] “Sustainable forage” for livestock does not ensure sustainable forage for native ungulates (elk, deer, Bighorm, sheep) and the few wild horses. How would “desred” ecological social and economic conditions be reconciled?

- [Bottom of page] The time is past when it was acceptable that most of 1.5 million acres of public lands is degraded by livestock grazing to benefit only 87 individuals/families/ corporations.

<u>Page 95, 3.3.2 Livestock Grazing</u>

- [Top and right margin] While we recognize that some allotment permittee ranchers have worked hard to improve conditions, many more have not and these livestock degraded forest/range lands allotments need to be vacated so the ecosystem has time to fully recover from deeply embedded livestock damage since the 1860s continuing to allow livestock to graze severely damaged lands obviously hasn't worked especially on the dry, heavily overgrazed southern Malheur—e.g. the Blue Dollar allotment where there is almost no native plant cover left even in the uplands and in the Flat sale area notably at springs and aspen areas but also re: barren ground in the uplands. Climate change will only make these situations worse with continued livestock use.

- [Left margin] No vacant grazing allotments should be re-opened. Those not meeting standards within a set period of time e.g. 3 years should be permanently closed. This should be a FP standard.

Page 96, 3.3.4 Mineral, Energy, and Geological Resources

- [Desired condition] How would adverse environmental effects be minimized? These Forest Plans are long on promises (that have not been met to date by the FS) and very short on specific mandates to guarantee these objectives will be met.

Page 97, 3.3.5 Water Use

- [Existing Condition] So are the wildlife getting enough water when cattle and sheep account for a whopping 74% of water rights and wildlife only for 16%? This 16% likely does not account for the needs of most terrestrial wildlife. On the Malheur it's even worse—almost all—94% for livestock watering and fewer than 1% for fish and wildlife. How are fish and wildlife supposed to survive hotter drier conditions under climate change? Livestock use needs to be greatly decreased, not increased as planned. This is not meeting multiple use objectives for livestock to get the vast majority of the National Forest water supply. Nor will this meet revised Forest Plans desired future conditions.

- [Desired Condition] Obviously this desired condition will not be met with livestock use at current levels.

Page 108, Management Areas

- [Table 19] 4B RMAs have no buffers?

Page 109, Administratively Designated Areas

- As recreation increases sharply with more encounters with others in wilderness and more recreational impacts to Wilderness in Forests near high population centers like the Deschutes and trees with increasing use restrictions and more limited access, it is very important to designate as much wilderness possible in the Blue Mountains Forests, which are likely to get spill-over recreation from more crowded and restricted wilderness areas in other regional Forests both to better accommodate increasing recreation and to better protect reclusive wildlife that seek greater security from humans, as well as to provide more quality high elevation habitat for wildlife migrating North up in elevation to escape climate change impacts.

- [Administratively Designated Areas] All current IRAs should be recommended for wilderness areas and protected from motor vehicle use and mountain bike trail disturbance mountain bike trail systems in use are known to stress wildlife.
- [Management Area Descriptions and Desired Conditions, MA 1A Congressionally Designated Wilderness Areas, after second paragraph] With only two designated wilderness areas, the Malheur needs full protection of all eligible roadless areas as wilderness in order to maintain or restore viability for far-ranging rare keystone predators including threatened-listed Gray Wolf and Canada Lynx, as well as candidate wolverine, sensitive pacific fisher, and vulnerable-ranked American Marten. The other Blue Mountain Forests have far more acreage in Wilderness, with 304, 166 acres in the Umatilla NF (p. 107 Umatilla FP) x 31,892 more acres proposed and 392,944 acres on the Wallowa-Whitman (p. 109 WWFP)

- [Table 20] The Umatilla NF already has over three times Wilderness of the Malheur and the Wallowa-Whitman has over four times as much. We ask for the full amount of potential wilderness to be recommended AHC for all three Forests.

- [Bottom left margin] With only 12,019 acres more recommended for wilderness designation.

Page 110

- [MA 1A] These exceptions for allowing human intervention in ecological processes, such as wildfire, insects, and disease, are far too broad for wilderness areas, as defined by the wilderness act—wildfire suppression in wilderness areas should not be allowed under these revised forest plans as wildfire suppression is now known to be highly detrimental to ecological integrity, forest structure, wildlife habitat, and recreational values. The Forests are quite capable of thinning themselves, and regularly do in wilderness. Other exceptions for human intervention are far too broad and vague as for protecting adjacent private property and in-holdings, reducing 'impacts' to federal facilities, historic of cultural, and the threatened, endangered, and sensitive species that obviously evolved with natural disturbances, including wildfire, insects and disease, in this region. That whole section undercuts the Wilderness Act and needs to be deleted.

- [First Paragraph] Delete

- [End of first paragraph, MA 1A] Apparently the FS is overly narrow, construing the criteria to qualify areas for Wilderness designation, as action alternative C found far more acreage to be eligible for designation and the actual acreage eligible may be greater than Alt. C's.

- [Table 21, MA 1B] This is a very insufficient amount of addition recommended wilderness for the Malheur.

Page 111

- [MA 2A Wild and Scenic Rivers (Includes Designated, Eligible, and Suitable Rivers), end of Description] What about the stretches of the John Day River for scenic or Recreational designation? There are long stretches of the main stem and the Middle Fork that are free flowing and have high scenic values. Both the main stem and the middle fork of the John Day have outstanding geological features—especially as the main stem flows through the John Day Fossil Beds National Monument. What other river or creek stretched did the Forest Service consider? What about the Silvies river? Canyon Creek?

- [Desired Condition, MA 2A] We support Lake Creek designation, but not only wild segments can be designated other rivers and creeks on the Malheur should be considered.

Page 112

- [Desired conditions, MA 2B] The current forest service definition of "maintaining or restoring the ecosystem" is far too broad (as it includes damaging commercial logging toxic herbicide use, etc.) to be allowed free rein and subjective interpretation for research natural areas. The forest plan should clearly prohibit commercial size logging, toxic herbicide use, mining, and other extraction or unnatural manipulation within RNAs, as well as prohibiting development, prescribed burning, shrub moving, etc. in RNAs.

Page 113

- [MA 2B Table 24] We support all proposed RNAs and especially are enthusiastic about so designating Dixie Butte, Strawberry Mountain, and Creeks. However we want to know what other natural areas were considered and why they were rejected. What about other inventoried roadless areas, like unlogged parts of Aldrich Mountains?

- [MA 2B Table 24] What about Vinegar Hill as an RNA? Wild canyon segments in the Emigrant District? The IRAs in the Prairie City District or along the Malheur River in the Cliff Knox area roadless area?

- [MA 2B Table 24, Strawberry Mountain] Why only 107 acres?

- [Below Table 24] There should be RNAs to preserve natural conditions in as many eco-types as possible—especially with the advent of extreme climate change.

- [MA 2C Botanical Areas, Description] Livestock should be prohibited within RBNAs and botanical areas.

- [Above and below Table 25, MA 2C] There are no other proposed botanical areas for the Malheur? Why not? What about the special botanical area (a valley?) next to the Big Mosquito or Raged Ruby sales? What about unique large ferns in the Middle Fork John Day area like the one we found while field surveying the Camp Lick sale? Why not last strongholds for White Pine (never logged sale limits in the Ragged Ruby sale, SW end—see our survey sheets) or last areas of white bark pine? What about the largest aspen grove left? Please ask Joe Rausch as to the location and mapping of some of these special botanical areas recently discovered or re-discovered on the Malheur. Were Malheur botanists (FS) consulted?

- [MA 2D Geological Areas, Description, end of first paragraph, above Table 26] Why not more geological areas proposed?

- [Bottom right and bottom margin, MA 2D] Some of the stretches of Bennet Creek, Ruby Creek, Granite Boulder Creek, and Sulphur Creek in the Ragged Ruby sale area warrant designation as scenic river segments, RNAs, or botanical areas. Some of those have reference condition creeks (Bennet, Granite Boulder, Ruby) in some segments, and some have unique boggy areas e.g. the sale [suit?] in Ragged Ruby that was dropped as special plant habitat with few buggy areas and long-toed salamanders. (South of highway 20, near the middle of the sale limits.)

Page 114

- [Top margin] On the Malheur these are many spectacular and unique rock formations, such as Eagle Rock and Cougar rock in the Camp Lick area and the big rock formation we found East of highway 97 in the East end of the Flat sale creek on the Emigrant District. Canyons on the Emigrant District also come to mind. Were local Forest Service staff asked to suggest more geological areas for designation? If not, why not?

- [MA 2F] Re: scenic byways: Why not add the stretch of Highway 26 through the Prairie City District between Prairie City and Austin Junction? This stretch is very scenic—especially in the fall when the larch have changed color.

Page 115

- [Desired Condition, end of paragraph, MA 2F] Isn't a Forest Plan revision an appropriate time to propose more recreational trails for the Forest, not just as window dressing for timber sales?

- [MA 2G Nationally Designated Trails, end of paragraph] Why aren't any more recreational trails suggested for the Malheur? This is a dismally low mileage of recreational trails for a National Forest. What sets apart nationally designated trails from existing trail systems in wilderness areas (e.g. Strawberry Mt. Wilderness) or local trails such as around Magone Lake and in roadless areas?

- [Desired Condition, MA 2G] Were local Forest Service asked for suggestions for additional recreational trails, botanical areas, and geological areas to be designated for each Forest?

- [MA 2H Scenic Areas, Desired Condition] Why are no additional scenic areas supported for the Malheur? Why not the middle fork of the John Day River (as roaded natural) This is a very popular area for recreation, well-loved by locals, and with parts under riparian restoration for salmon & other fish by the warm springs tribes and others—a high ecological value area.

Page 116

- [MA 2J Municipal Watersheds, Description, below paragraph before table 29] From where does the city of John Day drive their water supply?

- [Below table 29, MA 2J] Why are Seneca and Prairie City water supply sources not considered municipal watersheds?

Page 117

- [Top and right margin] These are Forest Plan attributes of Roadless areas that support our objection that all existing roadless areas eligible for wilderness designation should be recommended as such and that all existing back country should be made roadless to better protect wildlife soils, headwaters, air quality, soils, TESC species, ecological integrity, solitude, primitive recreation, keystone predators, Native cultural and sacred sites and carbon sequestration to slow climate change.

- [Desired Condition, MA 3A] Given the Forest Service's inability to maintain at least 80% of its existing road system (see MFP p. 83) the back-country roads should not be the first to decommission.

- [MA 3B Backcountry (Motorized use), Description] So why doesn't the Forest Plan disclose the prohibitions under the 2001 roadless rule that apply to motorized areas that overlap with inventoried roadless areas? These roads should be closed.

- [Desired Condition] Motorized use on roads conflicts with the desired condition of 'generally' natural ecological processes predominate.

- [Desired Condition] Are these MA 3B areas currently used by motorcycles, OHV, and snowmobiles? These represent very significant disturbance to wildlife for the back country. Who built the trails and primitive development?

- [MA 4A General Forest, Description] Is any current motorized use of MA 3B areas really at significant levels? Are trails for this use off-road and cross-country (as would be banned by the Malheur travel management plan) or roads only kept open through use and unmonitored as to impacts?

Page 118

- [General] Current ongoing logging and grazing on the Malheur is producing conditions to the Forest Plan Desired condition—i.e. diminishing the variety of native plant communities; not preserving ecological integrity re: adequate abundance of mature and large trees, snags, large down wood, intact denser habitat for density—dependent species; not leaving the landscape "predominantly natural in appearance"; not allowing the area to be maintained largely through ecological processes; and not contributing enough important habitat for aquatic, plant, and wildlife species that benefit from functional habitat. Doubling the timber volume and increasing livestock grazing will only make this landscape scale degradations worse and even more extensive. (Inconsistency with purpose and need) NEPA—avoiding full public disclosure.

- [Desired Condition, MA 4A] If this is the description of a benign existing condition for riparian areas, why does the Malheur FS accept increased livestock grazing, which will inevitably set back riparian areas from ever meeting RMOs or desired conditions, and why is the Malheur Fs aggressively pushing logging within RHCA buffers—or is it Region 6 pushing this?

- [MA 4B Riparian Management Areas, Description] Also why is the Malheur Forest Service continually identifying and mapping wildlife connectivity corridors only to degrade their suitability as connectivity by commercially logging them?

- [Below table 30, MA 4B] So what is allowed and what is prohibited within these "Riparian management area widths" that are no longer called buffers? If these were "no logging" and "no livestock grazing" buffers? If these were "no logging" and "no livestock grazing" buffers, they would be fairly good and acceptable but as "widths" no protection to riparian areas is offered or guaranteed.

<u>Page 119</u>

- [MA 4B] Statements in the Malheur Forest Plan supporting our objection that there should be no logging, livestock grazing, or new road construction allowed in the riparian management areas, which should be buffered from such management impacts by enforceable standards.

- [MA 4B] NEPA inconsistency with purpose and need of planned allowed management actions within RMAs.

- [Third paragraph, MA 4B] This still evades the question of what kind of management is allowed in RMAs and with what loopholes.

- [Third paragraph, MA 4B] Logging, livestock grazing, and road use within RMAs are completely contrary to the professed objective of maintaining, enhancing or restoring "ecological processes responsible for the diversity, productivity, and sustainability of riparian habitats" (MFP, p. 119)

- [Bottom of fifth paragraph, MA 4B] -i.e. no logging, livestock grazing, road impacts, diversions, etc.

- [Bottom of fifth paragraph, MA 4B] CWA: What standards will ensure that these desired conditions will be attained where is the recovery planning for severely damaged streams in the Forest plan? How will streams be brought back into compliance with state water quality standards?

XIII. Objections to "MA 4B Riparian Management Areas" Section

Page 120

- [General] NFMA: Forest Plans are supposed to provide guidance, along with enforceable standards to ensure that goals and objectives are met. Dream-like rhetoric describing desired conditions (which are in great contrast to actual existing conditions for most streams and other water bodies on the Malheur) are not enough to meet NFMA requirements for a Forest Plan without clear enforceable direction to achieve those desired conditions. Witness all the lovely pipe dreams of the Malheur's desired conditions for riparian management areas with absolutely nothing in the Forest Plan that mandates that these conditions actually be achieved—no long-term plan with clear incremental objectives, no timeline for meeting major goals ("Desired Conditions"), no enforceable standards to make sure these goals are ever achieved. This is not the intent of NMFA, to merely posture or pretend (see Malheur Forest Plan pages 119-121).

- [Third Complete Desired Condition] While these Desired RMA conditions seem well-grounded in the science, they are too general for non-Biologist managers to interpret. Somehow these conditions need to be better illustrated (perhaps with photos showing reference conditions for different stream types) and steps laid out to explain how to get from devastated conditions to these desired conditions—which certainly won't happen with continued livestock grazing in RMAs (and increased!), commercial logging in RMAs and continued road use that is hydrologically connected to RMAs.

Page 121

- [Comment on first paragraph (that carries over from page 120)] Imagine being the Forest Service manager asked to follow this Forest plan direction for rangeland Desired Condition. What are "near-natural" levels? How much does "vegetation" (plants) need to "contribute" to "soil condition, nutrient cycling, and hydrologic regimes"? How is this determined? How is the average annual plant production potential determined? How is 70% of that measured? How is the appropriate "litter amount" determined? How is the reproductive capacity of perennial plants determined to be "sustainable over the long-term"? There is no apparent guidance for answering such questions. This leads to a level of subjectivity where anything goes and (given the lack of enforcement) nothing changes.

XIV. Objections to Table 31 on Page 124

The following changes must be made as a partial remedy to BMBP's objections:

- For "Timber harvest" Use or Activity: Change the following Management Areas from "Suitable" to "Unsuitable": 2A, 2C, 2G, 2H, 2J, 3A, 3B, 4B

- For "Grazing (cattle and sheep)" Use or Activity: Change the following Management Areas from "Suitable" to "Unsuitable": 1A, 1B, 2A, 2G, 2H, 2J, 3A, 3B, 4B

- For "Motor Vehicle Use (summer)" Use or Activity: Change the following Management Areas from "Suitable" to "Unsuitable": 2C, 3B, 4B

- For “Motor Vehicle Use (winter)” Use or Activity: Change the following Management Areas from “Suitable” to “Unsuitable”: 2C, 2G, 3B, 4B

- Generally for “New Road Construction” Use or Activity: Better but really no new road construction is ideal

- For “New Trail construction (for motor vehicle use)” Use or Activity: Change the following Management Areas from “Suitable” to “Unsuitable”: 3B

- For the “Mechanical fuel treatment” Use or Activity: Depends on what kind—chain saw by hand or heavy equipment; Consider changing the following Management Areas from “Suitable” to “Unsuitable”: 2J, 3A, 3B, 4B

XV. Objections to “Objectives” Section

Page 125

- [Between Third Paragraph and Table 32] Note how often commercial logging is proposed to meet objectives designed to justify commercial logging (re: Table 32)

- [Table 32, row 1] Does the Forest Service mean “active restoration” by logging? Fire condition classes are a source of (undisclosed) scientific controversy

- Table 32, row 2] Does the Forest Service mean “Improving forest vegetative conditions” by logging? This statement is very vague.

Page 126, Table 32 Continued

- [Rows 2 and 3 under “1.2 Species Diversity”] Why are only open forest species planned to guide management (logging) outcomes?

- [Row 3 under “1.2 Species Diversity] Since when did the Forest Service care so much about cassin’s finch? Since it became convenient to rationalize more heavy logging. Same comment about white-headed woodpecker.

- [Row 6 under “1.2 Species Diversity] Why reduce sagebrush density in sagebrush steppe habitats?

Page 127, Table 32 Continued

- [Row 1 under “1.4.1 Wildland Fire”] Use noncommercial thinning and prescribed fire only. The Forest Service use of fire condition class and logging mature trees to reduce fire “risk” is highly questionable.

- [Row 1 under “1.4.1 Wildland Fire”] Use noncommercial thinning and prescribed fire.

- [Row 1 and 2 under "1.4.2 Insects and Disease"] Oppose using commercial logging. Logging does not reduce insects and disease.

- ["1.6. Structural Stages"] Moist upland forest and even dry forests that have been over-logged naturally go through an understory re-initiation stage. Natural mortality must be allowed to happen to create snag and down log habitat and replenish soil nutrients.

- [Row 1 under "1.6 Structural Stages"] The Forest Service is not managing for large dbh cold forests by logging large and old trees.

- [Row 2 under "1.6 Structural Stages"] We are opposed to converting old forest multistory to old forest single story in PAGSs and forest types where mixed conifer multilayered canopy is the natural condition.

- [Row 1 under "1.7 Plant Species Composition"] Blanket prescriptions (237,000 acres) lead to ignoring microclimate and site specific conditions.

- [Row under "1.8 Stand Density"] This has to be based on site specific conditions—closed stands are not necessarily unnatural in productive sites.

- [Row under "1.10 Soil Quality"] The Forest Service cannot "improv[e] forest vegetation conditions" by logging.

Page 128, Table 32 Continued

- [Row under "2.3.1 Rocky Mountain Elk] No logging or clearcutting should be used to "promote a mosaic patchwork." Such a mosaic already exists or can be created through noncommercial thinning and wildfire.

- Elk security needs to include providing plenty of hiding and thermal cover, as well as road closures and decommissioning—consider root causes of loss of elk security and avoid exacerbating the problem.

- [Row under "2.5 Roads and Trails Access"] Greatly reduce the mileage of maintained roads to what can and will be maintained—eliminate most 3 digit and all background roads except major through access.

- [Row 1 under "3.3 Goods and Services"] Oppose 84 MMBF. 84 MMBF is completely unsustainable and ecologically devastating for the Malheur. Timber sale volume and livestock use need to be reduced down to at least Alternative C levels.

- [Row 2 under "3.3 Goods and Services"] Oppose 132,200 AUMS (annually). Too high. Alternative C or less for timber volume and AUMs.

XVI. Objections to "Annual Anticipated Accomplishments for the Malheur National Forest" Section

Page 129

- [Table 33, Row 1 under "Lands Suitable for Timber Production"] Bring down saw timber production to Alternative C levels or less and only on lands suitable for timber production.

- [Table 33, Row 1 under "Lands Not Suitable for Timber Production"] Eliminate <u>all</u> the sawlog extraction from lands <u>not</u> suitable for timber production.

- [Table 34, Row 1 under "Activity"] We oppose even-aged regeneration harvest (acres) and clearcutting.

- [Table 34, Row 2 under "Activity"] Reduce to Alternative C levels or less.

- [Table 34, Row 1 under "Total Timber Harvest (acres)"] Remove. Allow for natural regeneration.

- [Table 34, Row 2 under "Total Timber Harvest (acres)"] 1,600 figure could be increased

- [Table 34, Row 5 under "Total Timber Harvest (acres)"] We oppose. Reduce well below current levels—to Alternative C or less.

XVII. Objections to "Long-term Sustained Yield Capacity and Allowable Sale Quantity" Section

Page 129

- [Above Section Heading] These are absurdly high timber yield and ASQ for the Malheur that clearly can no longer be sustained due to about a century of over-logging and recent unsustainably fast landscape scale logging rotation.

- [Left margin of paragraph, to sentence: "The allowable sale quantity is the average annual amount of commercial timber that can be sold from National Forest System lands that are suitable for timber production."] Apparently <u>not</u> based on any multiple use conflicts and constraints,

- [Bottom-right margin] 111 mmbf is <u>not</u> a long-term sustainable yield capacity for the Malheur "consistent with multiple-use objectives"—i.e., all the desired conditions stated in this Forest Plan—such as for TESC species' recovery, including terrestrial species, elk viability, continued soil productivity, denser and moister mixed conifer forest MIS or focal species, recreational aesthetics, carbon sequestration to slow climate change, wildlife and fish ability to migrate and disperse under climate change, etc…

- [Bottom-left margin] 80 mmbf is not a sustainable average annual allowable timber sale quantity for the same reasons that 111 mmbf is not a long-term sustainable yield consistent with multiple-use objectives, because the Malheur has already been severely overlogged (and over-grazed) to the point of no return, soils are deprived of biomass, nutrients, the large trees are almost all gone, and tree sizes average 3-11 inches dbh.

XVIII. Objections to "Design Criteria" Section[13]

Page 132

- [KW-1S] This allows for continued destructive new road construction as long as there is no net increase or minimal decrease in road mileage, with no constraints on the effects of new roads built.

- [KW-2S] As usual, there is no means suggested to achieve these desired habitat conditions while allowing for more dams and diversions.

- [KW-3S] This standard contains a huge loophole for allowing hydro-electric dams etc . . . in key watersheds for TES fish.

Page 134

- [SD-5S] Not in Umatilla Plan due to the lack of sage grouse there. There's loophole → "Appendix B contains consideration for compensatory mitigation for the greater sage-grouse."

Page 140

- Strangely, #2.5, Roads and Trails Access w/ RT-1G guideline of limiting motorized vehicles to roads etc. designed for use in the [Malheur] Motorized Access and Travel Management Plan is missing, even though the Malheur (and the Wallow-Whitman) are working on such plans. This could be problematic later, that these plans are not built into the Forest Plan. See Umatilla Proposed Revised Forest Plan at p. 138.

Page 141

- [Section 3.3.1 Forest Products] This section 3.3.1 Forest Products, would allow the Malheur National Forest to return to clearcutting although the Malheur has almost entirely abandoned clearcutting as it is unsustainable on dry forest—i.e. it does not grow back. There's lots of evidence of this lack of future productivity on the Malheur in old clearcuts that have never

[13] These Objections are both objections and remedies to the Design Criteria. Because the Design Criteria are largely the same for all three forests, these objections and remedies apply with equal force to the Design Criteria in the Proposed Revised Umatilla and Wallowa-Whitman National Forest Plans.

recovered or are only very slowly coming back after many decades. Some are reverting to juniper rather than the original ponderosa pine.

- [Section 3.3.1. Forest Products] As with the Umatilla Forest Plan, all the following standards should be deleted: FP-1S, FP-2S, FP-3S, FP-5S, FP-7G

- [FP-3S] Clearcutting has been discredited widely in the Best Available current science.

- [FP-7G] Prohibit clearcutting, overstory removal, "salvage," seed tree, and shelterwood. These are all forms of clearcutting or virtual clearcutting. Any exception should be limited to young, even-aged, single species plantations of off-site Ponderosa pine in the moist forest—i.e., the wrong forest of mixed-conifer type for the site having been planted. But such an exception would have to be very specific and exclude clearcutting in plantations where most of the planted pine died or is dying and the area is naturally regenerating to other species.

Page 144

- [MA1B-3G] Chainsaws and trail machines—esp. the latter—are not really necessary for trail maintenance and should not be used. Chainsaws can start fires and require carrying flammable toxic fuel.

- [Bottom Margin] What's missing here (and in the other Forest Plan revisions] is that logging should not be authorized within Wild and Scenic River corridors—This is a lessening of protection from the old Forest Plan, and needs to be a standard. The Forest Service is already making logging incursions into Wild and Scenic River corridors.

Page 145

- [MA 2B Research Natural Areas] Logging should be specified as prohibited in RNAs as it would "inhibit the purpose for the RNA establishment," and livestock razing should also be prohibited by a standard—especially as most Research Natural Areas were designed to represent and protect particular native plant communities that could be destroyed by either logging or livestock grazing, both of which simplify plant community structure (i.e., eliminate plant species diversity).

- [MA2B-3S] Delete the word "common". I.e., standard should be changed to: "Removal of mineral material shall not be authorized within research natural areas."

- [MA 2C Botanical Areas] See changes made in Umatilla Forest Plan

- [MA2C-3G] There should be no commercial logging in botanical areas.

- [MA2C-6G] Modify to delete the following stricken language: "Removal of common mineral material should not be authorized within botanical areas ~~unless doing so will not adversely modify special features~~."

- [MA2C-7G] Modify to delete the following stricken language: "Utility corridors should not be authorized within botanical areas, ~~unless doing so will not adversely modify special botanical features~~."

- [MA2C-8G] Delete "endemic (control)" as it allows for the use of toxic herbicides if the insects or diseases are deemed to be epidemic, rather than letting natural disturbance processes take place, and killing native plants in the process. Same change should be made in Umatilla and Wallowa-Whitman Forest Plans.

- [MA2C-3G, MA2C-4G, MA2C-5G, MA2C-6G ,MA2C-7G, MA2C-8G] Should be changed to standards with proposed amendments/modifications.

- [MA2D-1G, MA2E-1G, MA2F-1G] Change to standards. See Umatilla Forest Plan objections re: changing guidelines to standards.

<u>Page 146</u>

- <u>[MA2G-3G]</u> Change to standard

- [MA2J Municipal Watersheds, Left margin] The Forest Service is trying to get their foot in the door to log municipal watersheds, which they have been mostly prevented from doing so far.

- [MA2J Municipal Watersheds, above heading] <u>Prohibiting</u> logging should be included as a standard for municipal watersheds.

- [MA2J-2S] All fertilizers and all toxic chemicals (e.g. fire retardant, herbicides, geothermal fluids) should be <u>banned</u> as a standard for within municipal watersheds, as water quality could not be guaranteed after such use.

- [MA3B-1S] Motorized use should be prohibited within backcountry within Inventoried Roadless Areas to better protect IRA's function as wildlife security habitat and to protect headwater's water quality for fish and other water uses.

- [MA4A-2G] Amend to read as follows: "Even-aged regeneration harvests of stands on lands suitable for timber production should not occur. This does not preclude the use of thinning of timber stands that are substantially damaged by fire, windthrow, or other events."

<u>Page 147</u>

- [Exceptions at top of page 147] The first exception "cutting related to research or experimental purposes" should be deleted." The second exception should be amended as follows:

  > "Removing particular species of trees <u>that were planted from off-site sources of that don't match the natural tree species composition of the surrounding area</u>."

The third exception should be amended as follows:

> "Improving wildlife habitat~~, range or recreation resources~~ to better reflect natural conditions within which the wildlife species evolved."

- [MA 4B Riparian Management Areas] Livestock grazing/use within Riparian Area buffers also needs to be completely prohibited as a standard. See Umatilla Forest Plan Objections.

- [RMA-1S] Commercial size logging (square inch dbh) should be <u>prohibited</u> within Riparian area buggers as a standard. That's missing from INFISH/PACFISH here.

Even though this is a standard, it's open to a lot of subjective interpretation on the part of the Forest Service.

- [RMA-3S] Edit to read as follows:

> <u>There shall be no commercial logging or extraction within RMAs.</u> Trees felled for safety shall be retained onsite ~~unless in excess of what is needed to achieve aquatic and riparian desired conditions.~~ If the desired quantity and size distribution of large wood has been met on site, the wood can be transported to other aquatic and riparian restoration projects.

<u>Page 149</u>

- [FM-7G, FM-8G, FM-9G, FM-11G] Change to standards

- [TM-1S] Edit to read as follows (<u>underlines</u> are additions, ~~strikeouts~~ are deletions):

> Silvicultural treatment shall occur in riparian management areas only as necessary to maintain, enhance, or restore ~~desired~~ conditions for aquatic and riparian <u>areas</u> ~~resources~~. When conducted, these activities shall avoid or minimize adverse effects t aquatic and riparian resources. Vegetation in riparian management areas shall not be subject to <u>commercial or</u> regularly scheduled timber harvest because they are not part of the timber suitability landbase.

- [TM-3G] Edit to read as follows (<u>underlines</u> are additions, ~~strikeouts~~ are deletions):

> Use of existing or construction of new landings, designated skid trails, staging, and decking should not occur in riparian management areas, unless they are associated with projects designed to <u>meet or</u> improve riparian management ~~areas conditions~~ <u>area restoration goals</u>. These features should:
>
> - be of minimum size,
> - be located outside the active floodplain, and

- avoid negative effects to large wood, bank integrity, temperature, and sediment levels.

Page 153

- [RF-8S] New construction of stream crossings should only be allowed with restrictions for aquatic restoration already vetted with the public, not for logging or new road building.

- [RF-11G, RM-1G, RM-2G, MM-1G] Change to standards

OBJECTIONS TO PROPOSED REVISED UMATILLA NATIONAL FOREST LAND MANAGEMENT PLAN[14]

NOTE: The Design Criteria (i.e., the Standards and Guidelines) are identical across all three Revised Forest Plans, although not all of the criteria apply to all three of the Forests. Because the criteria are the same, the Objections identified below to the criteria included in the Umatilla Proposed Revised Forest Plan apply with equal weigh to those same criteria to the extent that they are incorporated into the Malheur and Wallowa-Whitman Proposed Revised Forest Plans.

I. Objections to "Management Challenges" Section

Page 17

- [Fire-adapted ecosystems] This is a highly questionable assumption

II. Objections to "Restoring and Maintaining Watershed Conditions" Section

Page 101

- [Top margin, above adaptive management] Very focused on recovering fish species with no attention paid to listed and at risk terrestrial wildlife and plants e.g. Gray wolf, lynx, wolverine, marten, Fisher, sensitive plants, Columbia spotted frog

III. Objections to "Management Area Descriptions and Desired Conditions" Section

Page 108

- [Table 21] Far short of the 500,000 acres of wilderness eligible for designation under alternative C.

Page 109

- [Table 22] So for 10-20 years. See next page.

Page 110

- [Table 23] Are these definitely proposed as wild and scenic rivers? How does this list compare with alternative C?

Page 112

- [Table 25] No new botanical areas

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[14] Each objection is identified as a separate bullet. The bracketed text at the beginning of each objection identifies the section/paragraph/location on each page that objection is referring to.

Page 113

- [Table 28] No new trails proposed

Page 114

- [Table 29] No new scenic areas

Page 115

- [MA 3B Backcountry (Motorized Use)] Roads should be decommissioned that overlap with IRAs, not kept open for motorized use.

Page 117

- [Table 30] These buffers are as good as or better than INFISH/PACFISH but what is allowed within them?

- [Table 30] This needs to be horizontal slope distance.

Page 122

- [Top Margin] So timber logging is allowed in all areas deemed unsuitable for timber production except for Wilderness except for Wilderness areas proposed wilderness and research natural areas (although there is even an exception to this for RNAs.) We need to get logging completely excluded from at least: Wild and scenic river corridors, botanical areas, geological areas, nationally designated trails (except for trail maintenance) Municipal watersheds, backcountry, non-motorized, and riparian management areas.

- [Table 31] We need to get grazing suitability and use dropped from at least wilderness and recommended wilderness (if possible), wild & scenic river corridors, backcountry non-motorized and most importantly, all riparian management areas.

IV. Objections to "Objectives" Section

Page 124 (Table 32)

- [1.2 Species diversity, first box] Good

- [1.2 Species diversity, second box, to the right] Lots of this has already been done for the white-headed woodpecker.

- [1.2 Species diversity, second and third box] Amy's BMBP wildlife comments still apply as do mine.

- [1.2 Species diversity, third box, to the right] Increase this how? What is it now? Funny, how the FS never cared about W. Bluebird until now.

- [1.2 Species diversity, fourth box] Good

- [1.2 Species diversity, fifth box] Good

- [Bottom margin] So no plans for conservation and recovery of threatened gray wolf and Canada lynx, candidate wolverine, vulnerable marten, rare pacific fisher, declining bird species not associated with open conditions—e.g. three toed woodpecker, Lewis woodpecker, olive-sided fly catcher, warblers, great grey owl, N. Goshawk, or for the many declining sensitive plants, Columbia spotted frog and painted turtle. This is not planning for species diversity.

Page 125 (Table 32)

- [Top left margin] This is very much business as usual increased logging based on the source "Fire, insects, disease" risk outdated rationale in the midst of science controversy.

- [Top right margin] My responses constitute objection resolution remedies for each proposed action. Alternative C serves as an all-purpose remedy if it has enforceable standards.

- [Objective] This equates to doubling the already unsustainable logging cut.

- [1.4.1 Wildland fire, First left box] (log)

- [1.4.1 Wildland fire, First right box] too high

- [1.4.1 Wildland fire, Second right box] Drop moist forest logging as already too much has been clearcut and it's not much departed from HRV

- [1.4.1 Wildland fire, Third right box] We agree with letting wild fires burn to rebalance the ecosystem—they will, anyway.

- [1.4.2 Insects and Diseases, First right box] Logging clearly hasn't helped with insects or diseases—wild fire might. This should be greatly reduced re: logging mostly to only p. pine dominated stands.

- [1.4.2 Insects and Diseases, second box] All moist forest logging must stop too much lost and converted to p. pine—conversion back of p. pine plantations to return diversity = often ok.

- [1.5 Invasive species] Develop and invasive plant management plan like the Malheur's to have a decision tree, avoid use of the most toxic herbicides, not use herbicides in riparian areas and phase out herbicide use overtime.

- [1.6 Structural stages, first box] This should not be done in moist forest and acreage should be greatly reduced.

- [Second box] Retain Eastside screens—no logging of live non-hazard tree > 21" dbh and no conversion if under HRV. Retain all trees > 15" dbh.

- [1.7 Plant species composition] "Dry" forest definition needs to be re-assessed as it's often moist. Reduce acreage.

- [1.8 Stand density] This should be greatly reduced

- [Bottom margin] Drop the moist forest logging from stand density logging, as moist forest is naturally denser and needs to be for associated wildlife. Stand density should not be an automatic trigger for logging. Less warm/dry intermediate (Douglas fir) forest should be logged to reduce stand density also. There are also more production sites that historically had closed canopy pure p. pine.

Page 126 (Table 32)

- [Top margin] In general, all our comments still apply as we addressed alternative E (which is only a little modified in the selected alternative) with alternative C. The only changes to the FEIS are likely NEPA window dressing more analysis, more scientific cities, etc.

- [Left margin] To improve soil quality, water, quality and plant diversity, there needs to be far less logging, roading, cattle grazing and sheep and toxic herbicide use—it's not sufficient to cause tremendous large-scale damage (e.g. by doubling the cut and increasing livestock grazing) and then mitigate minimal acreage of existing damage. The only robust restoration proposed is for aquatic restoration There needs to be a lot more passive restoration (no logging, reducing road mileage, no grazing by livestock) to restore and support terrestrial wildlife.

- [2.3.1 Rocky mountain elk] The FS can't meet these elk security goals while increasing logging.

- [Bottom left box] There's already a lot of openings across the Umatilla from clear-cuts and wild fires—no logging should be done for elk openings.

- [2.5 Roads and trails access] Decommission three digit and closed roads—including all RMAs. No road maintenance in the backcountry or an ecologically damaging road—including in elk security areas. Reduce annual cut to alternative C level or less.

- [3.3 Goods and Services, second box] 49,200 AUMs is way too high—reduce to alternative C or less.

- [Below table] 56 mmbf = not much for so much logging!

- [Annual Anticipated Accomplishments] As usual the only "accomplishments" noted by the Forest Service is 'vegetation management" logging, prescribed fire, livestock grazing and herbicide use. These are the real goals.

- [Bottom margin] Everything about the revised plan is bent to accommodate an accelerated scale and pace of logging with greatly increased timber volume, so the restoration goals will not be met, especially with increased livestock use—thus no significant enforceable standards.

V. Objections to "Long-term Sustained Yield Capacity and Allowable Sale Quantity" Section

<u>Page 127</u>

- [First bullet] This is not sustainable ecologically.

- [Second bullet] Too high, should be less than current level as with alternative C.

- [Table 33, activity] Need to eliminate all clearcutting

- [Table 33, total timber harvest] For every year, this should at least be reduced by half—actually by more re: moist forests.

- [Table 33, bottom of table] Need to greatly reduce cattle and sheep AUMs. No vacant allotments should be re-issued. There should be no livestock grazing in riparian MAs, wild and scenic rivers, wilderness, etc.

- [Table 34, MMBF] Why are lands not suitable for timber production planned for logging? How much of this is hazard tree logging along roads?

VI. Objections to Design Criteria[15]

<u>Page 130</u>

- [General] Even the <u>standards</u> are weak. All of my objections below on standards and guidelines imply or state our proposed resolution remedy.

- [KW-1S] New road construction needs to be simply ended. This is ridiculous as it allows for only limited incremental reduction in roads that could be much greater with no new road construction.

[15] These Objections are both objections and remedies to the Design Criteria. Because the Design Criteria are largely the same for all three forests, these objections and remedies apply with equal force to the Design Criteria in the Proposed Revised Malheur and Wallowa-Whitman National Forest Plans.

- [KW-2S, KW-3S] There should be no more hydro-electric dams allows in listed fish habitat!

- [WM-1S] How would conditions be maintained? Give examples.

Page 131

- [WM-2S] "Best management practices" have not been working to achieve desired conditions—new science guidance should be followed.

- [RE-1G] Add language like "e.g., no weirs, no removal of wood from streams, no major excavating of stream channels, no boulder placement when there's naturally no boulders, avoid heavy equipment stream crossings"

- [RE-3S] Good, but how would it be enforced? So where are the prevention standards?

- [RE-4S] Good, but "avoided" is better.

- [SD-1G] Delete "To the extent practicable". This can be done.

- [SD-3G] Define the WUI more narrowly—e.g., 50-100' on either side of a major access corridor or occupied private structures on private land—at the land boundary.

- [SD-1G, SD-2G, SD-3G] Change to standards

- [Generally] Notably, all the species diversity protection measures are only guidelines and can be ignored.

Page 132

- [SD-4G] These are not binding restrictions and would allow for vast acreages of post-fire logging of live trees and snags. All post-fire "salvage" logging needs to be prohibited. This would nullify the need to have this guideline. There's an overwhelming scientific consensus against post-fire logging.

- [First bullet under SD-3G] In other words, tree species conversion.

- [SD-6G] Only a guideline for threatened or endangered listed gray wolves. Change to a standard!

- [SD-7G] Change to a standard! A guideline would allow for baiting of wolves to be shot.

- [SD-8G] Change to a standard! Not using standards for wolf protection measures violates the ESA and the Oregon wolf plan.

- [SD-9G] Change to a standard. This is ridiculous—all of these are common sense protections that can easily be implemented. The Forest Service obviously hates wolves.

- [RE-5S] ESA Compliance standard→ is "minimize" wording sufficient? There needs to be specific guidance for not retarding recovery of gray wolves and Canada lynx, for preventing uplisting of wolverines, fisher, marten, and Columbia spotted frog.

Page 133

- [FLS-1G] Change to a standard. Modify as per underlined language: "Management activities should avoid adverse impacts to wolverine, <u>Pacific fisher, and American marten</u> and <u>their</u> habitat to maintain population viability and avoid a trend towards federal listing." Give examples of avoiding adverse impacts—e.g., no logging fragmentation of suitable marten habitats, no trapping allowed n wolverine, marten, fisher, lynx, and gray wolf habitat.

- [FLS-3S] <u>Prohibit</u> livestock use in occupied TESC plant species habitat.

- [FLS-4G] <u>Prohibit</u> livestock use in known populations with sensitive plants. Change to a standard.

- [FLS-5G] Change to a standard.

- [FLS-6S] Add the following language to the end of the Standard: "If the latter applies, then avoid logging etc. in the spring reproductive season and require logging over frozen ground only. Noncommercial thinning by hand and prescribed burning may be OK if not during the spring reproductive season."

- [FLS-8G] Change to a standard.

- [FLS-9S] Add the following language to the end of the standard: "Avoid road construction unless it replaces an open road in an ecologically damaged condition."

- [FLS-10G]. Change to a standard. Add the following language to the end of the standard: "Avoid road construction unless it replaces an open road in an ecologically damaged condition."

- [FLS-12S] Modify as follows (<u>underlined</u> is addition, ~~strikeout~~ is deletion): "Recreation areas (e.g., ski areas) and other recreational activities shall minimize <u>avoid</u> ~~adverse~~ impact to whitebark pine and its habitat."

- [FLS-13G] Change to standard.

Page 134

- [FLS-14G] Change to a standard and eliminate the "utilize compensatory mitigation" language. The modified standard would be as follows (add in underlined language):

Leasable minerals: Consent to mineral leases should be given with stipulations to minimize adverse effects to threatened and endangered species. Active minerals leases should be mitigated to minimize impacts that exploration and production operations may have on threatened and endangered species.

Locatable Minerals: Locatable mineral operations should be mitigated within the context of the Forest Service regulations at 36 CFR 228 to protect threatened and endangered plant and animal species from the effects of exploration and mining activities.

- [LH-4G] Change to a standard.

- [FLS-16S] Delete the following language: "unless a herder is with the sheep at all times and retrieves known strays within 24 hours." This exception would be akin to baiting the wolves so they would be shot—not good for sheep or wolves.

- [IS-1G] Change to a standard.

- [IS-2S] Change to a guideline. Its highly problematic and outdated to apply rapid response to native "pests" such as insects and disease or "unwanted" animals. Modify the Guideline as follows (underlined are additions, ~~strikeouts~~ are deletions):

  An integrated ~~pest~~ invasive exotic plant management approach, including early detection and rapid response, shall be used to manage ~~pests, such as insects, diseases, and~~ invasive exotic ~~or unwanted~~ plants ~~and animals~~.

- [IS-3G] Modify as follows (underlined are additions, ~~strikeouts~~ are deletions):

  Determine appropriate range of treatments necessary to meet objectives for invasive species ~~and native pests~~, while minimizing negative effects of treatments. Methods including prevention, manual, cultural, mechanical, regionally approved chemicals and biological agents may be considered ~~within all management areas~~. Some management areas may be off limits to chemicals or biological agents, such as RMAs, RNAs, IRAs, and Wilderness Areas.

- [IS-4G] Change this to a Standard. "Plan and conduct activities" is too vague. Modify as follows (underlined are additions, ~~strikeouts~~ are deletions):

  ~~Plan and conduct activities~~ Follow the Region 6 Programmatic Decision for Management of Invasive Plants to minimize or prevent the potential spread or establishment of invasive exotic species.

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- [IS-8G] Change to a standard.

- [IS-9G] Change to a standard. Modify as follows (underlined are additions, ~~strikeouts~~ are deletions):

  To avoid or minimize exposure to pesticides, treatment areas ~~should~~ must be posted to inform the public and forest workers of application dates and pesticides used.

- [SQ-2S] Amend last sentence above Table 35 to read as follows (underlined are additions, ~~strikeouts~~ are deletions):

  Effective ground cover can include rocks, woody debris, vegetation, or other natural elements.

- [OF-1G] The 21" dbh limit to logging needs to be fully retained. Change this to a standard. "Large" trees needs to be greater than 21 equal to 21 inches dbh for all tree species.

- The exceptions form the rule, as there are so many silvicultural whim exceptions, and this would defeat the purpose and need of retaining large and old trees. Generally speaking, large trees are scarce, are more fire resistant, and will not significantly limit controlling spread of insets or disease. Shade tolerant trees greater than or equal to 21 inches dbh are likely at least 100 years old, so historically there. Most density on the forest is small trees. It's not necessary to remove large and old trees to restore aspen, cottonwood, white bark pine (or white pine) where the regional scarcity of large and old trees is a competing value, it is not making the other restoration impossible.

- Delete exceptions 1, 2, 3, 5, and 6. Only retain the following exceptions, as modified (underlined are additions, ~~strikeouts~~ are deletions):

  - Trees need to be removed to reduce danger/hazard trees along roads or in developed sites.
  - Trees need to be removed to form key pieces in complex instream large wood structures, but these should be limited to use with river to large creek systems where these are the only trees that could work and where no already felled hazard trees can be used.

- [Footnote 17] The Van Pelt Guidelines are deeply inadequate for determining old fir.

- [Footnote 18] Change "30 inches diameter" to "21 inches diameter"

- [SC-1G] Add the following language at the end of the Guideline: "The ecosystem "restoration" does not include density reduction or tree species composition conversion.

Page 137

- [RME-2G] Change to a standard. Modify the last sentence as follows (underlined are additions, ~~strikeouts~~ are deletions): "Authorized administrative use of forest system roads also may be exempted from this ~~guideline~~ standard—but not for logging.

- [RME-3G] Change to a standard.

- [2.3.2 Bighorn Sheep General Comment] Use Alternative C standards for separating domestic sheep and goats from Bighorn sheep, as Alternative C provisions are recognized in the DEIS as being the most effective.

Page 138

- [CR-1S] Indigenous peoples must be in agreement with any exemption in a programmatic agreement.

- [TR-2G] Change to a standard. Modify as follows (underlined are additions, ~~strikeouts~~ are deletions): "Forest Service managers should ~~take into account~~ avoid project effects to culturally significant foods prior to tribal consultation efforts."

- [LO-1G] Change to a standard.

- [LO-2G] Add the following sentence to the end: "Federal Forest Service land exchanges should not trade away relatively pristine and intact wildlife and fish habitat for industry-damaged lands that may require restoration."

Page 139

- [FP-1S] Delete this standard and substitute in the following standard: Prohibit all even-aged or two-aged clearcutting, including "regeneration" cuts, seed tree, shelterwood, or partial removal cuts.

- [FP-2S] Delete this language in its entirety. Instead, prohibit all "cut blocks, patches, or strips" created by "regeneration" logging methods.

- [FP-3S] Delete. Clearcutting is not consistent with multiple uses—prohibit it.

- [FP-5S] Delete. Clearcutting is outdated and debunked as not ecologically beneficial or sustainable.

Page 140

- [Generally] Of the 5 forests we field survey, only the Umatilla and the Deschutes still cling to discredited clearcutting forms of even-aged or "regeneraton" or "two-aged" logging. In the Blue Mountains clearcutting does not promote recovery, diversity, or ecological integrity.

- [Table 36] We are strongly opposed to the Umatilla (or other Forests) continuing to engage in even-aged or "two-aged" (two-staged) forms of clearcutting. Delete those two columns of Table 36 as accepted forms of logging under the Forest Plan.

- [LG-1G] Make this into a standard and mandate livestock grazing deferral after 5 for at least 3-5 seasons after the fire or any severe prescribed fire.

- [LG-3G] Change to a standard and modify the language as follows (underlined are additions, ~~strikeouts~~ are deletions):

    In areas classified as less than fully capable or suitable for grazing, no livestock use is allowed ~~only limited livestock should be authorized after the limitations of the site are considered in designing the site-specific allotment management plan.~~

- [LG-4G] Change to a standard and replace with the following:

    Upland Forage Utilization Guideline: Maximum utilization should be 35% low to moderate departure or 30% moderate or greater departure, not a combined 65% low to greater departure.

Check science re: whether 30% or 35% departure are too much.

- [Table 37 question]: Are these additive?

Page 141

- [LG-5G] Change this to a standard. 40% shrub utilization is too high for full recovery.

- [SU-1G, SU-2G, SU-3G] These should all be standards or they will never be enforced.

- [3.3.4 Mineral, Energy, and Geological Resources General Objection] There should be a lot more standards to protect the ecosystem and multiple uses of the National Forest from mining and energy development such as geothermal leasing, oil and gas development and pipelines, and fracking—such as by prohibiting poisoning of the water table (addition of chemicals), toxic gas emissions, too many roads and well pads, traffic conflicts, triggering of earthquakes, and land subsidence, and destroying scenic and recreational values, endangered wildlife and fish species, and destroying critical or crucial wildlife and fish habitat, as well as violating indigenous people's treaty rights, cultural uses, and destroying cultural plants and sites.

- [MA1A-4G] Change to a Standard.

- [MA1A-7G] Change to a standard. Modify as follows:

    Camping and campfires ~~should~~ are not ~~be~~ authorized within 200 feet of lakes, streams, or other camps within wilderness areas in order to maintain wilderness character.

- [MA 1A Wildland Fire Management Activities in Wilderness, General Objection] Fireline construction and wild fire suppression should be banned in wilderness areas—after all, wildfire suppression is the source of many ecological imbalances giving rise to more destructive management. Active wildfire suppression does not maintain wilderness character and so violates the Wilderness Act.

- [MA1B-2G] Bicycles should not be allowed in recommended Wilderness as this creates a Mountain Biker lobby against Wilderness designation. Modify as follows (underlined are additions, ~~strikeouts~~ are deletions):

  ~~Mechanized (bicycle) use and~~ nonmotorized travel may occur on existing trails in recommended wilderness areas.

- [MA2A-1G] Change to a standard. Delete the phrase "a need is identified and" from the last sentence.

Page 143

- [MA2B-3S] Delete the word "common."

- [MA2C-3G] Delete current language and replace with: "There should be no commercial logging or extraction in Botanical Areas."

- [MA2C-3G, MA2C-4G, MA2C-5G, MA2C-6G, MA2C-7G, MA2C-8G] Change to standards.

- [MA2C-6G] Delete the following language: "unless doing so will not adversely modify special features."
- [MA2C-7G] Delete the following language: "unless doing so will not adversely modify special botanical features."

- [MA2D-1G, MA2E-1G] Change to standards.

Page 144

- [MA 2F Scenic Byways and All American Roads, General Comment] Most of the Management Area Guidelines should be changed to standards, as without potential enforcement, the basic character and purpose of these Management Areas could be list to inappropriate development or damage. These guidelines serve to define the purpose and character of the Management Areas in a common sense way and should be mandating, nto avoidable.

- [MA2F-1G, MA2G-1G] Change to Standards.

- [MA3B-1S] Delete. Drop motorized use in the back country per Alternative C.

- Natural levels and tree species of regeneration would help heal existing imbalances.

- [MA4A-1S] Delete. There should be no clearcutting allowed. The 5 year restocking requirement needs to be abandoned, as it causes the Forest Service to overplant the forest, creating or exacerbating much of the existing acreage of too dense stands that cause unnatural levels of tree stress and forest "health"/"stocking"/rigor problems.

Page 145

- [MA4A-2G] Delete. Prohibit clearcutting as a standard—aka "even-aged" or "two-aged" "regeneration." The only exception could be for potential removal openings to remove off-site ponderosa pine from past clear cuts into the midst of moist mixed conifer forest types or mixed conifer not dominated by ponderosa pine.

- [RMA-2S] Change to: No herbicides, insecticides, pesticides, or other toxicides and chemicals will be applied directly to water, allowed to draft into waterways, or be allowed within Riparian Management Area buffers—in order to protect water quality, fish, aquatic invertebrates, amphibians, and riparian plant diversity. Manual and mechanical methods can be used instead as long as they do not harm aquatic and riparian wildlife, plants, water quality, and soil integrity.

- [RMA-3S] Add: There shall be no commercial logging or extraction in RMAs.

Page 146

- [RMA-7S] Delete the phrase "Where possible" from the beginning of the second sentence.

- [RM-1G and FM-2G] These both need to be Standards, not just Guidelines. Fire "fighting" bases and staging areas are notoriously destructive and fire retardant is very toxic to fish (witness the Fall River massive fish kill due to retardant dumping, as well as to water quality and trees (e.g., junipers).

Page 147

- [FM-4G, FM-6G, FM-7G] Change to standards.

- [FM-8G] Change to a standard. Delete the phrase "designated wilderness areas" in the first sentence. Add in "Wildfire suppression should not be done in designated wilderness areas."

- [FM-11G] Change to a standard.

- [FM-12S]

- [TM-1S] Delete "desired" and "resources" and modify as follows (underlined are additions, ~~strikeouts~~ are deletions):

> Silvicultural treatments shall occur in riparian management areas only as necessary to maintain, enhance, or restore ~~desired~~ conditions for aquatic and riparian ~~resources~~ ecological integrity, and to meet riparian and aquatic restoration management objectives. When conducted, these activities shall avoid or minimize adverse effects to aquatic and riparian resources. Vegetation in riparian management areas shall not be subject to ~~regularly scheduled~~ commercial or regularly scheduled timber harvest because they are not part of the timber suitability landbase.

- [TM-3G] Change to a standard and modify the following clause as follows (underlined are additions, ~~strikeouts~~ are deletions):

> . . . unless they are associated with projects designed to ~~improve~~ meet riparian management ~~areas conditions~~ area restoration goals. . . .

Page 148

- [Generally] Silvicultural standards only include provisions re: riparian areas, soils, and slope. There should also be silvicultural standards prohibiting all logging of large trees (or the regional deficit will only become worse) and prohibiting tree species conversion to non-historic species for the site, plantation creation and perpetuation and clearcutting—including seed tree, shelterwood, overstory removal, and two-aged "regeneration" cutting.

- [TM-4G] Change to a standard and replace with the following language: "There should be no commercial size logging and yarding within RMAS."

- [TM-7S] Modify as follows (underlined are additions, ~~strikeouts~~ are deletions):

> Timber harvest on lands not suitable for timber production shall occur only to meet ~~desired conditions~~ restoration goals for each management area other than timber production.

- [TM-8G] Change to a standard and clarify that TM-8G does not imply commercial logging in RMAs. Add the following to the end of the last sentence (underlined is addition): " . . . and delivery to streams by not commercially logging and only noncommercial thinning when necessary to improve riparian hardwoods."

- [TM-9S] Clarify that TM-9S does not imply commercial logging in RMAs. Add the following to the end of the last sentence (underlined is addition): " . . . and delivery to streams by not commercially logging and only noncommercial thinning when necessary to improve riparian hardwoods."

- [Generally] There should be standards prohibiting commercial logging in the following management areas: Riparian areas, Wilderness areas, inventoried and de facto roadless areas, areas never logged before greater than 10 acres, popular recreation areas, critical habitat for

PETC species (potential listing, endangered, threatened, and candidate species), RNAs, botanical areas, Wild and Scenic River corridors, and habitat for vulnerable-ranked species and species in decline.

- [GM-2S] Delete the following language: "unless they do not prevent or retard attaining aquatic and riparian desired conditions."

- [GM-3G] Change to a standard.

Page 149

- [Top margin and down left margin to top of footnotes] When such thorough standards are needed due to perpetual non-attainment of RMOs and failure to recover listed fish species and their critical habitat due to livestock grazing, why is increased livestock grazing proposed in the selected Alternative? All the Forest Service management strategies have not worked so far overall (since the inception of the Forest Plans decades ago, and decades before that), in violation of NMFA, INFISH/PACFISH, Forest Plan standards, and the ESA. So to achieve legal compliance with these laws, the starting point with a Revised Forest Plan has to be either no livestock allotment use, or much reduced livestock use (e.g., Alternative C or better) to ensure compliance.

- [Item 1] Since current utilization standards largely have not been met, deteriorated baseline conditions need to be taken into account through more stringent standards.

- [First bullet under item 1] Increase "4-inch residual stubble height" to at least 6 inches

- [Second bullet under item 2] Delete "45%" so that it reads "utilize no more than 30 percent of deep-rooted herbaceous vegetation . . ."

- [Third bullet under item 3] Delete "25%" so that it reads "limit streambank alteration to no more than 20 percent . . . ."

Page 150

- [Top bullet on page 150] Delete "40%" so that it reads "limit use of woody species to no more than 30 percent of current year's leaders . . . ."

- [First bullet under item 2] Delete "4 inches to" so that it reads "maintain a minimum of 6-inches residual stubble . . . ."

- [Second bullet under item 3] Delete "35 percent" so that it reads "utilize no more than 30 percent of deep-rooted . . ."

- [Third bullet under item 3] Delete "20 percent" so that it reads "limit streambank alteration to no more than 15 percent"

- [Fourth bullet under item 3] Delete “30 percent” so that it reads “limit use of woody species to no more than 20 percent of current year’s leaders . . .”

- [GM-4G] Change to standard and delete the phrase “As appropriate.”

- [GM-5G] Change to standard and delete the phrase “or minimized.”

- [GM-G2] Delete loophole language.

- [RF-1G] Change to a standard and delete the phrase “unless no other feasible alternative exists.”

- [RF-2G] Delete and replace with the following: “Prohibit all new road construction, including “temporary” roads.”

<u>Page 151</u>

- [Top margin] There should be a standard mandating avoiding any new road construction (including “temporary” roads) except to replace segments of existing open roads that are causing ecological damage and could be re-routed to avoid the damage.

- [RF-6G] Change to a standard. Re: reconstructing existing roads—apply “minimize” language only to existing roads.

- [RF-11G] Change to a standard.

- [RM-1G and RM-2G] Change to standards.

<u>Page 152</u>

- [MM-1G, MM-2G, MM-4G] Change to standards.

- [MM-2G] Delete the phrase “To the maximum extent possible” from the first sentence.

<u>Page 153</u>

- [MA4B Uses and Hydropower] There should also be standards to protect terrestrial wildlife, public health, air quality, and soils from impacts of energy pipelines, transmission lines, roads, and other infrastructure, not just riparian conditions, water, and fish.

OBJECTIONS TO MONITORING AND EVALUATION PLAN AND "SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION" SECTIONS OF UMATILLA, MALHEUR, AND WALLOWA-WHITMAN PROPOSED REVISED FOREST PLANS

Because the Monitoring and Evaluation Plans and the "Summary of the Analysis of the Management Situation" Sections are identical, or nearly identical, in all three Proposed Revised Forest Plans (Umatilla, Malheur, and Wallowa-Whitman), these objections and remedies apply to the monitoring and evaluation plans in all three proposed revised forest plans. The page references below are to the sections in the Umatilla Proposed Revised Forest Plan.

I. Objections to Monitoring and Evaluation Plans

Page 155

- [Top, right, and bottom margins] Re: NEPA Inconsistency with purpose and need: The Forest Service needs to use validation monitoring based on comparison of the full range of best available science to test key foundational assumptions that are likely wrong and out-dated that underlay the Purpose and Need of most agency timber sales and fuel reduction projects and much of the reasoning shaping this Forest Plan(s) Revision. Such controversial assumptions include: wildlife is driven primarily by full loading; fire condition class ratings are accurate; logging to low basal area and of mature and large trees reduces fire "risk" (re: severity, extent, and incidence); logging helps reduce and control insects and disease in the forest; prescribed fire as it is practiced mimics the effects of wild fire; moist mixed conifer and riparian corridor forest I unnaturally dense due to fire suppression; logging to reduce fire "risk" is somehow not wildfire suppression; logging improves recreational values; logging contributions to climate change are not measurable or significant; and logging is "restoration", etc. Without using science to evaluate the validity of all these unsubstantiated assumptions, the Forest Service will never shift to ecologically sound restoration.

- [Left margin next to bullets] So how does the Forest Service justify not using validation monitoring to determine whether the land management plan needs to be changed?

- [Above item 1] The Forest Service needs to stop setting "Desired Conditions" based on false assumptions biased toward logging.

- [Above item 2] This seems like passing the back. When will these broader questions for monitoring be developed and monitored?

- [Item 2] So what is happening to the PACFISH/INFISH Biological Opinion Effectiveness Monitoring Program under this Forest Plan Revision?

- [Last paragraph] Who is responsible for making sure all this happens?

Page 157 (Table 38)

- [Table 38] Yet most of this water quality, stream temperature, and stream flow data is not being gathered now-what will ensure data collection will actually happen? It's legally required now and mostly not happening and all environmental protection agencies are now being systematically de-funded, while the Forest Service has largely failed to monitor these parameters, and prioritizes timber sales and other extraction instead. We want to see an identified chain of responsibility and monitoring in Forest Service line item budgets.

Page 158 (Table 38)

- [Middle square] Monitoring for status and trend of riparian plants should be annual.

- [Below table] So if PIBO parameters are still being monitored, does that mean that PACFICH and INFISH are still in effect for the forest plan revision, or not?

Page 159 (Table 39)

- Strike the goals and related monitoring in the following rows: 1, 2, 3, 4, 6, 7, and 10

- [Proposed Monitoring Question, Row 1: Have lands been adequately restocked within five years of regeneration harvest?] This requirement needs to be ended. Strike.

- [Proposed Monitoring Question, Row 2: Have lands that are not suitable for timber production become suitable?] There should no longer be a goal of increasing timber production—the land base has been unsustainably over logged already and is exhausted. Strike.

- [Proposed Monitoring Question, Row 3: What is the maximum size opening from even-aged management?] There should be no more even aged management. Strike.

- [Proposed Monitoring Question, Row 4: What are the trends in fire regime condition class?] Fire regime condition class is not a good indicator. Strike.

- [Proposed Monitoring Question, Row 5: What are the trends in insect and disease hazard?] Not a “hazard” but a natural thinning process

- [Proposed Monitoring Question, Row 6: What are the trends in stand density?] Not a good indicator. Strike.

- [Sixth row, third column] Stand density as an indicator leads to blanket “prescriptions” to lower density regardless of historic conditions and forest type.

- [Proposed Monitoring Question, Row 7: What are the trends in stand density?] Not a good indicator. Strike

- [Proposed Monitoring Question, Row 9: What are the trends in early seral tree species (ponderosa pine and western larch) composition?] Strike. Early seral tree species abundance is not a good indicator as it is biased against allowing for moist forest late seral (old growth) tree species composition and structure need by wildlife and desired by the public.

Page 160 (Table 40)

- [Top margin] Why is there no monitoring planned for federally and state listed gray wolf and for federally listed threatened Canada lynx, and no monitoring planned for candidate species wolverine and greater sage grouse—this is illegal under the ESA. There absolutely has to be monitoring for these TESC species to ensure recovery.

- [Bottom left margin] So why is the FS suddenly concerned about these species? Much better MIS indicators are those being scrapped: Pileated woodpecker, American Marten, primary cavity excavating wood peckers, plus the northern goshawk for dense forest with large trees. We want all of these as MIS, not Cassin's finch, Western Bluebird and Fox Sparrow, which are biased toward open conditions.

Page 161 (Table 41)

- [Top margin] Boreal owl hardly exists on these forests compared to great grey owl—why not use great grey owl and pileated woodpecker instead?

- [Second row, first column] Delete "or"

- [Top left margin] Population trends must be used in addition to habitat trends for any serious or effective species recovery or conservation population trends cannot be established without scientific, peer-reviewed population studies and continued population monitoring. Population studies for management indicator species (to the current MIS should be retained for each forest) should be mandated and funded with guaranteed funding for both the population studies and the follow-up monitoring.

- [Bottom margin] Priorities for population studies should be MIS and TESC in decline or very rare (e.g. lynx, fisher, wolverine) and species dependent on greater forest density, old growth forest structure and intact forest (less habitat fragmentation) (e.g. American Marten, northern goshawk, and pileated woodpecker) as these are species more likely to be in decline soon due to heavy overlogging and loss of denser forest habitat, old growth forest, and continuous forest habitat.

Page 162 (Tables 42 and 43)

- [Below table 42] The forest service does not include consideration for science arguing for forest carbon sequestration protection despite climate change being an "end of civilization and biodiversity" scale of global crisis—just in order to perpetuate an unsustainable timber sale quota.

- [Below table 43] Best available science already indicates strongly that it's not a good idea to reduce forest carbon sequestration by increasing the timber volume cut and continuing to reduce forest cover through heavy logging to low basal areas and continued clearcutting on some of the forests (e.g. the Umatilla) "Opening" up the forest by removing mature and large trees incrementally equates to loss of needed carbon storage to slow already extreme climate change and clearcutting and other heavy logging should be considered incremental deforestation. Old growth forest with large trees sequesters the most carbon and take hundreds of years to develop; loss of mature trees equally to loss of nearer future old growth forest.

Page 163 (Table 44)

- [Top Margin] Yet the forest service willfully ignores all the science (including statements by Dr. James Hausen re: the absolute necessity of preserving forest carbon sequestration rather than indicating it through timber sales.

- [Third row, first column] The desired range of structural stages is flawed and biased toward logging. The HRV concept is not based on actual pre-European colonization data as it is supposed to be, and the need for carbon sequestration in the face of extreme climate change should supersede outdated and unsustainable levels of logging and artificial manipulation of tree species composition and structural stages. Such manipulation and extensive intensive logging has already proved disastrous and should not be continued.

- [Fourth row, first column] It depends on what the "desired" condition for "herblands" and "shrublands" is based on, to determine whether this is a flawed indicator.

- [Fifth row, first column] This is ridiculous, under climate change (and with logging) we can't determine the mix of wildfire severity and frequency. All the fuel logging so far has not had any significant effect on wildfire severity or frequency.

- [Eighth row, second column] The FS needs to abandon the idea that forest "goods and services" consist of now unsustainable levels of extraction like fuels reduction, timber logging and livestock grazing AUMs. More essential goods and services include carbon sequestration, fresh water, biodiversity, intact wildlife habitat, edible plants, etc.

Page 164

- [Top table, second row, first column] Good question: yes—more pine bark beetle, mistletoe, etc.

II. Summary of the Analysis of the Management Situation

Page 173

- [Capacity of Designated Wilderness Areas to Support Human Use] This assumes that Wilderness is only useful for humans and with respect to human use although Wilderness is vital for many wildlife and fish species' viability—especially with the widespread degradation of other National Forest lands and the need for many species to shift habitat ranges under extreme climate change. Further many supporters of Wilderness just want it to exist, whether or not they spend much time in it, so user days do not adequately reflect the popularity of Wilderness.

- [Determination of the Potential to Resolve Public Issues and Management Concerns] It is highly inappropriate and inadequate for all three Forest Plans to be combined and similar in one Forest Plan Revision—and by a Regional "team" rather than by local Forest Service staff who know these forests much better and care about them far more than those who live far away and spend little or no time in the Blue Mountains.

- [First bullet under "Determination of the Potential to Resolve Public Issues and Management Concerns"] So what?

- [Second bullet under "Determination of the Potential to Resolve Public Issues and Management Concerns"] The public is not "customers" but users, stewards, and surrogate owners.

- [Third bullet under "Determination of the Potential to Resolve Public Issues and Management Concerns"] This is not necessarily true—the Forests differ from each other.

- [Sentence between bulleted lists] This was not true "collaboration" at all, but just Forest Service driven listening sessions or information.

- [Fourth bullet] These sessions did not develop a vision for future management and did not include the full spectrum of public interest.

- [Sixth bullet] The Blue Mountains Forest Plan Revision team used a series of meetings with the public very biased toward small towns historically dependent on resource extraction from the Blue Mountains Forests and toward extraction users such as livestock, grazing allotment permittees even though these are National Forests with broader visitation and more non-extractive use.

- [Determination of the Need to Establish or Change Management Direction] So why was the more legitimate science-based ICEMP Forest Plan Revision shelved?

Page 174

- [Provincial Consistency] Why? These Forests have different ecological conditions, different topography, different types of use, different (still unmonitored) status situations for key wildlife populations. The Umatilla has more moist forest than the Malheur; the Umatilla and the Wallowa-Whitman have more existing designated Wilderness; the Umatilla has more listed fish habitat and more wolf packs, etc.

- [Provincial Consistency] We are not convinced that blended management of the Forest Plans is better for improving site-specific conditions.

Page 175

- [Agency Direction] The understanding of sustainable interrelationships and processes is not evident re: the decisions to greatly increase the timber sale volume, the livestock grazing, and the minimal amount of Wilderness proposed for recommended designation.

OBJECTIONS FINAL ENVIRONMENTAL IMPACT STATEMENT, LAND MANAGEMENT PLANSFOR THE MALHEUR, UMATILLA, AND WALLAWA-WHITMAN NATIONAL FORESTS: VOLUME 2, CHAPTER 3, BIOLOGICAL ENVIRONMENT[16]

Page 225

Changes to Elk Habitat and Security

*The "removal" of wildlife connectivity corridors (likely by planned logging) in the selected alternative is highly problematic for providing quality elk cover and adequate security habitat, and also for many species that would need to disperse and migrate due to the effects of climate change and would need sufficient security in dispersal connectivity corridors, including lynx, marten, and other far ranging keystone predators, as well as plants dependent on greater shade and moisture retention.

Page 226

Terrestrial Wildlife Species – Affected Environment

NEPA – Inaccurate Use of Science (see paragraph 4)
*The great majority if this wildlife analysis did not appear in the DEIS for public comment.
* While the FS admits here (paragraph 4) that high elevation forests usually burned with stand replacement fire at infrequent intervals – hundreds of years, in practice they log them as if they were subject to frequent fire.
* USFWS and ODFW are really only concerned about wildlife that are hunted or fished and bring in revenue to the agency.
*"Maintaining the appropriate mix of habitat" (Paragraph 3) is code for FS logging and prescribed burning….
* In practice the FS is not using conditions prior to European settlement as a reference baseline for HRV, which is inaccurate use of the science.
* Actually, low elevation forests burned at varying severity over a range of about 5 – 30+ years, not "every few years".
* This is very much the Forest Service passing the "buck" – the responsibility - for elk, deer, bighorn sheep, Pronghorn, and to a lesser extent, other hunting tags such as for Black Bear and Cougar and Grouse. They don't seem to be very concerned about any other wildlife – even fish – and are busy trying to eradicate ("manage") threatened Gray Wolf and Cougars.

Page 227

* The Forest Service has never cared about the fate of resident and migratory bird species and is only pretending to care now.
* It is not just "early" logging and fire management strategies NEPA inadequate analysis that caused high departure from historic conditions, but also current, ongoing logging and wildfire

[16] Each objection is identified with a separate asterisk (*).

suppression, with which the Forest Service is still deeply engaged. The FS loves to emphasize early managing for the White-headed woodpecker as, in their view, this mean logging down to very low residual basal areas, but White-headed woodpeckers also glean insects in dense thickets of young Ponderosa pine, and it is dangerous to do mass "prescription" management focused on a single species, or only a few species that represent very open conditions – all the awareness of the great and abrupt changes in aspect, elevation, temperature, moisture, geology, soil depth, and wildfire effects acknowledged on Page 226, Paragraph 1 was just thrown out the window, sacrificing outstanding biodiversity to jobs and revenue-driven heavy logging as usual, with no concern for maintaining biodiversity or ecological integrity as a whole.
* "Inventoried roadless and wilderness area qualities offer large areas of wildfire habitat that are relatively undisturbed by humans and are especially important for some wildlife species." (Page 227, Paragraph 2) *Based on this, more IRAs should be designated as wilderness and there should be no more Forest Service attempt to log in IRAs, as with multiple timber sales on the Malheur, recently Magone, currently Cliff Knox.
* Yet, the Forest Plan revision selected alternative would significantly <u>increase</u> (double or more) the timber volume logged, associated road-building, and livestock use.
* Despite Forest Service admission of the extensive and deeply damaging effects of past (and ongoing) fire exclusion, logging, road-building and livestock use (the management results over which the Forest Service has the most control), the Forest Plan Revision selected alternative would be inconsistent with the purpose and need of improving these degraded conditions by doubling (or more) the logging, increasing associated road construction and use, increasing livestock grazing, and continuing to spend their budget and staff labor on extensive wildfire suppression. (See FEIS Vol. 2 last year, and bullet point Page 227 through 1st Paragraph bullet points, Page 228)

Regulatory Framework * NEPA – Inconsistency with Purpose and Need

"In addition, the Forest Service Manual directs the Regional Forester to identify sensitive species for which viability may be a concern on each National Forest (FSM 2670.32)"
* There has been no real concerted effort to save any sensitive species except some plants and fish.
* NFMA-MIS Viability. "New management indicator species were selected and analyzed for the plan revision alternatives."
* Actually the Forest Plan Revision has jettisoned most MIS required under NEPA and replaced them with arbitrary "focal" species with no enforcement for maintaining viability under NFMA.
* ESA and Forest Service Manual Direction: * so far the Forest Service has completely failed to manage for the recovery of Threatened and Endangered Species and their designated critical habitat for: Gray Wolf, Canada Lynx, and until very recently, for threatened fish species, including Bull trout, Chinook salmon, and Steelhead trout. There is no sign of recovery plans in the Revision.

<u>Page 229</u>

*NFMA MIS requirements – We had no opportunity with DEIS to comment on the highly questionable use of "surrogate species" in lieu of "management indicator species" required by NFMA. The surrogate species approach is <u>not</u> a "credible and scientifically rigorous method to assess ecosystems that contribute to the viability of wildlife species" as claimed in the FEIS (Page 229, par. 1), but actually the source of significant scientific controversy that the FEIS fails to disclose. *NEPA – Failure to Disclose Scientific Controversy.

* Surrogate Species: "Two of the focal species, Rocky Mountain elk and mule deer, are not included in the table because they do not have population viability concerns."
*Actually, mule deer are evidently in decline on the Malheur National Forest.

Table 328. List and status of species analyzed in this forest planning process

*As a Threatened listed Keystone predator with particular habitat needs threatened by climate change, Canada Lynx should be a designated Management Indicator Species, as should Gray Wolf.
*Great Gray owl has been at least a focal species, but now not.
*This Table 328 listing fails to identify what other species "surrogate species" are meant to represent, as per the NFMA requirement to provide for viable populations of native vertebrate species. * NFMA MIS requirements

Page 230

Table 328 continued

* There is a heavy bias in the Forest Plan Revision toward "Surrogate" species birds being those found in very open forest conditions (e.g. Cassin's Finch, White-headed woodpecker, Western bluebird, and Fox sparrow. This lacks scientific integrity (NEPA) and fails to meet NFMA requirements.
* Fisher **is** Sensitive listed and was recently petitioned for uplisting, though unsuccessfully, and is still very rare, thought it used to inhabit almost all forested parts of the Pacific NW, including the Blue Mountains. It has particular habitat needs threatened by logging of large trees and heavy logging of old growth complex forest (mixed conifer) and should be a management Indicator species. (MIS)
* The Fringed Myotis should be a MIS for bat species, or else Townsend's Big-eared bat.
* Based on their precarious population status in both states, Peregrine falcon(s) (Endangered), Gray wolf and Wolverine (Sensitive, very rare, an proposed for uplisting) should all be MIS – especially as they also represent different habitat and prey needs. Doesn't NFMA suggest identifying ESA TES-listed species as MIS?

Page 231

Table 328 Continued

* There is a very heavy bias in the Forest Plan Revision against planning for recovery of TES ESA–listed predators by not even identifying them as Management Indicator Species, much less providing guidance for developing recovery plans.
* Other MIS designation omissions include Sensitive-listed reptiles (Striped Whip snake), Sensitive-listed bats (e.g. Pallid bat), and various other imperiled rare species such as the Greater

sage-grouse (obvious choice), Pygmy rabbit, Preble's shrew, Mountain goat, and California bighorn sheep, another obvious choice candidate.
* Apparently any listed or rare species with changed management implications for the Forest Service is not considered for MIS status in the Forest Plan Revision, even though MIS status could be used productively to assist recovery, as NFMA intended, while the ESA mandates recovery.

Page 232

Table 328 Continued

*Species that are Sensitive-listed (and currently not in recovery) in both states should definitely be designated as MIS, such as Townsend's Big-eared bat, Gray wolf (actually endangered in both states), and Wolverine, Inland tailed frog, Harlequin Duck, Bald eagle (an obvious candidate). Probably all Sensitive-listed species for either state should also be MIS unless their population and habitat needs are well represented by another MIS. For instance, there are no MIS to protect the viability of amphibians (e.g. Columbian spotted frog) although frog species are currently in sharp decline globally and will be greatly threatened by climate change, and there is also no MIS to represent turtles (e.g. Painted turtle) or snakes (e.g. Striped Whip snake) or ducks (e.g. Harlequin duck).
* Bald eagle would be a better MIS that Golden eagle, as it is Sensitive listed in both states.

Page 233

Table 328 Continued + Terrestrial Species Viability

* The hypocrisy of the Forest Plan Revision is striking. Any Sensitive-listed species or Threatened, or Endangered species with changed or new (* re: NFMA MIS and ESA uplisting trends) management implications for the Forest Service is either not designated for any monitoring or recovery MIS designation (e.g. Peregrine falcon, Gray wolf, Wolverine, Greater Sage grouse, Canada Lynx, Pacific Fisher, Pallid bat…), or is downgraded to an unprotected (lacking any legal enforcement provisions) "surrogate species" status, such as Fringed myotis bat, Rocky Mountain and California bighorn sheep, Townsend's bat, Inland tailed frog, Harlequin duck, Wolverine, Bald eagle, Columbia spotted frog, Painted turtle, Wilson's snipe, and Eared grebe, are both not-Sensitive listed or particularly rare, but get Surrogate species status over Sensitive-listed species, as do Dassin's finch, Western Bluebird, Fox sparrow, Golden eagle, loggerhead shrike, Sage thrasher, Northern Harrier, and Marsh wren. In fact, the surrogate species designated are heavily weighted toward relatively common birds, and toward birds that thrive in very open conditions (i.e. no or less trees). Birds are species that the Forest Service can easily claim are declining due to habitat conditions or herbicide use elsewhere. These biases are far too consistent to be accidental.

Page 234

* We had no chance to read the science sources for our comments on the DEIS re the surrogate species approach, as I do not think these science cites or justifications were included in the DEIS.

* The Forest Service fails to disclose the scientific controversy over the use of surrogate species. Note only 2 studies cited re: "calling into question" NFMA assumptions re MIS, yet the "surrogate" species concept is weaker. And never mind that NF MA is a law! From where, or whom, did these scientists receive their funding? The Forest Service? The timber industry?
* NEPA again, inaccurate use of the science. The use of surrogate species and models instead of hard data is failure to use best available science. Sections of the last paragraph of Page 234 appear to be "wishful thinking" assumption not supported by the science.
* NEPA: Failure to use Best Available Science, i.e. hard data on species status, including reproductive success rates, population trends, and viability thresholds via population studies on the ground to determine MIS status, not "surrogate" species.

Page 235

*There are many problems with the Forest Service managing for the historical range of variability and order to maintain viability for "most" species: 1) This would be managing habitat conditions without basing management on any actual knowledge of key (and listed) species' status on the ground which could result in losing many imperiled species to management impacts allowed by the "surrogate" species approach; 2) The Forest Service has been basing HRV assumptions on data gathered well after European colonization and periods of heavy logging and intensive livestock grazing, rather than on pre-European contact conditions, which is supposed to be the basis for HRV assumptions, based on the science; and 3) recent science publicized through the Pacific Northwest Research Center challenges the idea that forests should be managed to resemble historic conditions or any static point in time due to the huge condition changes and new challenges posed by extreme climate change. The Forest Service's key foundational assumption is flawed and the Forest Plan Revision surrogate species/HRV approach will fail to ensure species' viability.
* Trends in population viability for species cannot possibly be determined without hard, field-based population study data to determine species' population trends. (see P. 235, par. 3)

Page 236

* The Forest Service carefully avoids analyzing the effects of increased heavy logging, increased road-building and use, and increased livestock use, to species' viability in general, or to the viability of species most risk, e.g. Gray wolf at risk from increased livestock use due to increased livestock-wolf conflicts, which so is the biggest cause of wolf mortality (shootings) in both Oregon and Washington.
* NEPA – Inadequate Analysis. It is a real stretch for the Forest Service to use studies considering livestock destruction of nests of ground-nesting birds only "a random event"… "with a low probability of occurrence. This is a very narrow, biased use of the available science on livestock impact to wildlife habitat. There is no basis for the Forest Service assumption that this highly selective inadequate analysis is "representative of conditions as a whole across the National forest[s]." NEPA – Failure to use the full range of Best Available Science.

Territorial Species Viability – Environmental Consequences

* Contrary to the Forest Service assumption (Page 236, par.4) that the potential to diminish biological diversity is greater if forests are not managed to keep conditions inside the [assumed] HRV, is the continued rapid decline in overall biodiversity (including the failure to improve the status of TES [Threatened, Endangered, and Sensitive-listed species] and Candidate species) since the Forest Service has been managing for HRV – since 1995, as heavy logging has greatly increased again and livestock devastation is ongoing.

Page 237

* Habitat conditions and risk factors alone cannot responsibly be expected to predict effects to species without even knowing the population status and trends of those species on the forests, e.g. how close to extirpation they may be? Which species are not affected by human influences?
* This means that effects analysis will be too general and broadly applied to be accurate for individual species – surely a NEPA violation re: the need for accurate analysis. How can effects analysis for wildlife be "programmatic"?
* How can natural disturbances possibly be modeled into the future under unpredictable extreme climate changes? The Vegetation Dynamics Development Tool is likely inaccurate due to highly speculative assumptions that must be used to somehow predict the extent and intensity (and location) of natural disturbances that are inherently unpredictable even without climate change.

Page 242

Table 239 A list of wildlife surrogate species addressed in the viability assessment for the Blues Forest Plan revision and their habitat associations and risk factors

increases, timber logging, livestock grazing, and habitat loss due to these kinds of management, all of which would be greatly increased under the selected alternative. This is typical of the glaring disconnect between "desired conditions" and business as usual management plans under the selected alternative (and all of the other alternatives except C). NEPA – Inconsistency with Purposes and Need, and NFMA – Failure to Ensure Viability of Vertebrate Species and MIS

Page 243

Table 330 Current and historical viability outcomes for surrogate wildlife species assessed on Malheur, Umatilla and Wallowa-Whitman National Forests

* On what actual field data (i.e. population studies) are these "current and historical viability outcomes" based? Without hard data on species' current population status, reproductive success, population trends, and viability thresholds, this is worthless guesswork, and inaccurate use of the science as well as failure to use best available science.
* Obviously, basing current viability outcomes based on assumed levels of source habitat is not entirely accurate – e.g. the Northern Goshawk and Pileated woodpecker assessments apparently ignore declines inevitable from forest Service targeting of forest density and mature and large trees for logging elimination such that any "excess" Pileated habitat above historical levels has already been eliminated, and disturbance of N. goshawks and logging of their species specific denser habitat, including Post-Fledging Areas, is now at a much higher level.

Page 249

Alternative C

This assumption of <u>more</u> old forest with logging of old forest, including logging of <u>large</u> trees, ignores the degradation of old forest source habitat this would cause under the selected alternative – especially with no protective designation of old forest at all – and also ignore the forests' tangle capacity to thin themselves through natural disturbances such as wildfire, insect defoliation, competition mortality, and root rot, all of which are actively thinning these forests now. This also ignores that most density is from very small trees <8 inch dbh.

Page 250

* There has been no significant reduction of wildfire incidence, severity, or extent from all the Forest Service logging intended to reduce wildfire "risk" across the West. Instead, conditions setting the stage for stand replacement wildfire have largely <u>in</u>creased due to heavy logging of overstory mature and larger trees that are more fire resistant, and due to removal of overstory shading and moisture retention, creating hotter, drier, forest conditions and in-growth of highly flammable dense small trees.
* Summary (Page 250, par. 2): This analysis ignore the extensive impacts to many wildlife species of heavy, very extensive logging under the guise of "landscape-scale forest 'restoration'" and the widespread opening of the forests "for" open-canopied forest species that has already taken place, as well as the forests' innate capacity to thin themselves without Forest Service assistance. *<u>NEPA –</u> Inadequate analysis

Page 267

Climate Change and Old Forest Species

*Restoration of resiliency is not achieved by heavy landscape-scale logging now being practiced and planned for increase under this Forest Plan Revision by the Forest Service.
*The Forest Service conflates heavy intensive landscape-scale commercial logging at an ecologically unsustainable pace and sale with "landscape scale restoration" and "restoration of resiliency." This is inaccurate use of the science.

Page 268

"A landscape "restoration " approach is not emphasized in alternatives A, B, or C and these alternatives would result in less resilient landscape than the other alternatives." (Page 268, par. 1)
*The highly damaged landscape suffering from heavy recent and ongoing logging to very low basal areas across huge area (up to 26,000 acres on the Flat sale on the Malheur NF) and continued heavy livestock overgrazing does <u>no</u>t testify to the need for so-called "landscape restoration" (which such logging is now called by the Forest Service) to result in a more resilient landscape. Instead, such logging and livestock grazing, which would increase under the selected alternative, has resulted in unnaturally degraded wildlife habitat, with great loss of native

biodiversity and overall ecological integrity and resilience. This is not a beneficial management strategy for addressing climate change effects.

Page 269

* Notably, the Forest Plan Revision never addresses logging in general, with all its well-documented ecological impacts, directly as a major category risk factor, preferring to avoid such disclosure by focusing on roads, livestock, and only compartmentalized components of logging, such as snag loss, rather than the many other logging impacts such as continued loss of mature and large forest structure, soil impacts, loss of significant forest carbon sequestration that would otherwise slow climate change, and CO2 emissions associated with logging, that also increase the logging impacts of climate change. Both of the latter and logging are completely missing in the climate change analysis. This is inadequate and biased analysis. NEPA – Inadequate Analysis
* No specifics are given in Page 269, par. 4, so all alternatives, including C would be more logging.

Page 270

* Flaws in analysis regarding fundamental assumptions driving decision-making have not changed in the FEIS.
* The FEIS logging does not mimic natural processes as there is extraction of mature trees that would otherwise become future snags an logs.
not make sense to further exacerbate climate change impacts re: loss of habitat, reduced connectivity of riparian habitats, and increased water temperatures, by causing the same impacts through heavy and increased logging, and increased road use and increased livestock grazing, as planned. This is inconsistent with the purpose and need of increasing forest resiliency. These impacts from heavy and extensive logging and livestock grazing are well documented.

Page 271

* The selected ALT E modified would not reduce the non-climate stressors as claimed, because heavy and extensive logging, associated roading, and livestock grazing would all be dramatically increased. The FEIS continually admits the impacts of past heavy logging, roading, and livestock grazing, but fails to analyze the impacts of current and planned heavy and extensive logging, roading, and livestock grazing.
* The FEIS also repeatedly acknowledges ALT C as the most beneficial for improving conditions toward the "Desired Future Conditions" of the Purpose and Need. H should therefore be recognized as the environmentally preferred alternative and be chosen as such, instead of choosing an alternative (E Modified) that would not be as likely to meet the stated purposes and needs and desired future conditions of the Forest Plan Revision.
* In Page 27, par. 4, shows the outcome of the bias toward surrogate species that are primarily open canopy dependent. This is a blatant bias that mimics the Trump regime. No other habitats are considered "habitats of concern" despite most listed mixed conifer forest, or riparian areas – U.S. Lynx, Marten, Fisher, Wolverines, Bull trout, Steelhead trout, Chinook salmon.

Page 272

"Although it is anticipated that all species would remain viable for any of the alternatives…" (Page 272, par. 4) There is no basis given to justify this assumption, and it is not assumed elsewhere in the Wildlife section of the FEIS.

* Only 3 of the species that are highly departed from historic conditions are associated with either early successional or more open habitats, yet the management plans would be driven toward much higher levels of destructive logging and livestock grazing under the selected alternative, theoretically to benefit 3 species out of 23 or 22 surrogate species! Obviously the real Forest Plan Revision agenda is to somehow justify increased status quo logging and livestock grazing even though this is unsustainable and these types of management are admitted throughout the FEIS (along with road construction and use) to be responsible for most of the problems with the current conditions and for the departure of current conditions from pre-European colonization historic conditions. This is very strained and twisted as a rationale for the selected alternative. The three species remain unnamed. NEPA - Inconsistency with Purpose and Need

Page 273

Table 333 Viability outcomes for surrogate wildlife species assessed on the Malheur National Forest in short (less than 20 years) and long (less than 50 years) time periods. Current and historical outcomes were not modeled over time. [*What does the last sentence mean???]

* NEPA – Failure to Disclose Methodology:

* There is no explanation as to how these viability outcome assessments were made for "surrogate" wildlife species even though the different outcomes for different alternatives often make no sense.

* short term e.g. Why would alternatives A, B, and E result in a better outcome than Alt. C for marten, wen Alt. C offers better protection to old forest, large trees, and riparian zones, and connectivity, as ell as for snags, than Alts A, B ? + E? Likewise, based on these same protections, Alt. C should be more beneficial to goshawk than Alts. A, B, and E. N. Goshawks are associated with dense multi layered forest with large tree and snags – the kind of forest Alts. A, B, an E aggressively target for logging.

* What data from the field re: the species themselves as used to determine the "surrogate" species viability outcomes in Table 333-335?

Page 278

"Based on the analysis, it appears unlikely that changes in threats are of sufficient magnitude to override the importance of source habitat in determining species viability." (Page 278, par. 4)

* Based on which analysis? This assumption appears unjustified.

ESA contributing to a trend toward uplisting.

* Are the three species directing management toward logging for very open conditions, Cassin's finch, Fox sparrow, and Western Bluebird? If so, only one of the three, Western Bluebird, has indicators of decline in habitat, and none of the three is listed under the ESA, whereas many

Listed species, Sensitive species, and Candidate for uplisting species are passed over for guiding management direction – e.g. Gray wolf Canada Lynx, Pacific Fisher, Wolverine.

Page 279

* Paragraph 1: Re: the Forest Plan Revision surrogate species designation bias toward species requiring little or no management changes!
* Paragraph 1 also indicates there are hardly any standards, and guidelines are voluntary.
* In other words "just trust us" i.e. the Forest Service
* NEPA – inadequate Range of Alternatives

See last paragraph, Page 279, last sentence: So it appears surrogate species were chosen that were mostly not listed or rare species (with the exception of the White-headed woodpecker, which is thought to require open forests) so that continued viability and no upward listing trend could be postulated for surrogate species.

ESA Arguments:
* The Forest Plan Revision fails to provide management direction to prepare recovery plans and protect critical habitat for Threatened, Endangered, and Candidate species (Gray wolf, Canada Lynx, and Wolverine)
* There is no mention of a need to prepare a recovery plan for each of these listed species or to protect critical habitat for them, as required by the ESA. It only mentions a need to analyze effects to them.
*The information re the analysis and determination process (Page 279, par. 4) has all been done in the past with no recovery or protection of critical habitat for listed species.
* The Forest Service has so far made no effort to "maintain or improve habitat conditions" for Gray wolf or Canada Lynx since their listing, and the Forest Plan Revision failure to mandate and guide preparation of recovery plans and protection of their critical habitat indicates intention to not follow through with the ESA requirement, in violation of the ESA.

Page 280

*This assumption that surrogate species analysis (which was not in depth or site specific, and was biased toward species adapted to open forest conditions) "addressed viability for all species in the Plan Area", effectively dismisses Forest Service responsibility for ensuring viability of listed species (including their recovery to non-listed status) and for Management Indicator species, thus violating the ESA and NFMA.
* This is a tremendous leap of faith and logical fallacy that surrogate species analysis "addressed viability for all species in the Plan Area". (emphasis ours) What analysis? This is especially not true since the surrogate species chosen mostly represent open habitat associated species, and there is clear bias in the surrogate species analysis toward being mostly concerned for open forest canopy- associated species, even though most listed species require denser forest conditions with mature and large live trees, snags, and logs. (i.e. Gray wolf is dependent on elk, Canada Lynx, vulnerable ranked Marten, and sensitive Pacific fisher.)

* The dismissive discussion of Lynx in Oregon and Washington ignores their historic residence (and thus likely reproduction) in Oregon and Washington and the need to recover these Lynx populations to meet ESA requirements.
* I have seen two lynx within 10 miles of the Umatilla NF in recent years (positive daylight sightings). The Forest Service could remedy the lack of population data for Lynx by doing population studies, but <u>chooses</u> not to meet this need.
* This was a political decision, not a science-based decision, to throw out the Lynx Analysis Units in Oregon and Washington and declare the Blue Mountains unoccupied by Lynx with no field studies.
* So far recovery objectives and recovery plans have not been identified for Threatened-listed Canada Lynx and Endangered Gray wolf under this Forest Service Handbook direction despite their listing.

Page 281

*We are strongly opposed to the Forest Service and USFWS writing off Lynx in the Blue Mountains as "unoccupied" without any thorough field studies, and not preparing recovery plans for Lynx in this historically [and presently, based on my sightings] occupied habitat. Lynx are rare in the Blue Mountains due to threats to their existence which gave them Threatened status, including logging fragmentation and human disturbance, both of which the Forest Service could control. Since the rarity of Lynx indicate their Threatened status, it also indicates their proper role as <u>Management Indicator</u> species to protect both Lynx, as likely the most sensitive species to external threats in boreal forest and thus the best candidate for protecting the habitat needs of other boreal species.
* There are indications that Boreal owl and Water vole are inappropriate species to protect habitat needs for Cana Lynx, as Lynx are under greater treat and need more protection for their viability, not less.
* Contrary to the FEIS assertion that "there is little active timber harvest anticipated (Page 281, par. 2), the Forest Service has been steadily logging cold forest wherever it exists in a timber sale, and is doing so currently. The Forest Plan(s) revision would increase overall logging.
* Ability to disperse is especially important at far edges of species ranges for genetic diversity.
* All provisions of the Endangered Species Act still apply for Threatened-listed Canada Lynx in eastern Oregon and Washington, yet the FEIS strains to imply that it is not important to recover Lynx populations or to protect their critical habitat even though they are a deep snow-dependent species at high elevations in the winter, very vulnerable to climate change.

Page 282

ESA Arguments – continued

* This discussion of Gray wolves fails to mention and analyze that Gray wolves are still considered Threatened by the state of Oregon (and Washington?) throughout their range in the state.
* Biologically, based on Conservation Biology science, the Gray wolf should not have been delisted at all. By failing to mandate development of species recovery plans and not providing guidance for making sure recovery is accomplished, the Forest Plan(s) Revision demonstrates the

agency's lack of commitment to recovering listed species and their willingness to join politically based ploys to evade their responsibilities under the ESA.
* The FEIS carefully downplays the Gray wolf's need for an adequate prey base – available prey – to maintain viability. Of course the alternatives <u>would</u> have much effect on the amount and distribution of habitat used by wolves and their prey species, contrary to the FEIS assertion of "little effect" of the alternatives, (Page 282, par. 3). Road access levels would greatly influence wolf disturbance and mortality by shooting and road kills, greater logging of elk and deer security and thermal cover would cause reductions in wolf prey.
* Increases in livestock use (as planned) would greatly increase wolf-livestock conflicts and related killings of wolves, the biggest contributor to wolf mortality, which means lack of wolf recovery, loss of wolf viability, and potential extirpation of wolves in Oregon or Washington, or re-uplisting of wolves, both violations of the ESA (see FEIS: Page 282, par. 3 with reference to APHIS and most wolf mortality being due to livestock depredations. Planned increases in logging, which will inevitable reduce elk and deer security and thermal cover along with associated increased and stained building of roads and planned increase in livestock use of the Blue Mountains Forests will all threaten Gray wolf viability and recovery under the selected alternative, leading to an upward trend in listing, violating the ESA.

<u>Page 284</u>

*Alternative C is clearly the most ecologically sound and best alternative to ensure Gray wolf viability and recovery. Re: greatest reduction of road disturbance.
* See FEIS support for Alternative C (Pages 284-285 and 286)

<u>Page 286</u>

FEIS support Alt. C re Gray wolf recovery (last paragraph) , not just status quo as with the selected alternative.
* Note paragraph 6 – Summary. Most plan revision standards and guidelines are only guidelines ad thereby not mandated and easy to violate on a regular basis.

<u>Page 287</u>

* The Forest Service considered there to be no wolverine in the Wallowa-Whitman until they were documented there recently on trail cameras. To highlight the one study that without any population considers there to be no evidence of wolverine occurrence in eastern Oregon is therefore disingenuous at best. This approach typifies the Forest Service approach to Canada Lynx and Pacific Fisher in the Blue Mtns. As well – deny their existence without looking very hard for them, then claim they don't exist on these forests or are only representative of "extreme" dispersal events (never mind that dispersal is highly important for genetic diversity and species viability), then dismiss them as not worth protecting. A similar attitude has been taken by the Forest Service to Gray wolf dispersal (photographed and recorded by professionals) through the Blue Mountain Forests. Yet we have seen 3 lynx (one on the Ochoco, 2 close to the Umatilla), 1 Fisher (Ochoco), and 1 wolf (Ochoco) in recent years.
* Specific habitat needs are still crucial to species viability.

Page 289

Alternative C benefits to Wolverine viability:
* Much better road disturbance reduction for Wolverine, Gray wolf, elk and deer, etc. in Alt. C than in selected Alt. E Modified. (see Page 290 re Alt. E Modified) (See also Page 288, last paragraph)

Page 290

* Most benefits to wolverine from Alterative C, <u>not</u> the selected Alternative E Modified, admitted in the FEIS

Page 291

What follows is response to p. 291 beginning at the second paragraph discussing Alternative E-Modified, road- related risk factors:

ESA arguments, Wolverine, Alternative C, Sensitive species.

FEIS admission of wolverine vulnerability to climate change.

Climate change-related importance of maximizing reduction of roads and road use, as with Alternative C.

This is glossing over the significant differences in benefits to viability of wildlife species between Alternative C (high) and Alternative E Modified (very low).

Viability of listed management indicator species must be insured, not just for "surrogates".

<u>Forest Service Terrestrial Wildlife Species:</u>

Forest Service definition of sensitive species as having population viability concerns and current or predicted downward trends in population numbers, density, and habitat capability.

Forest Service Manual 2670.32 requirements referencing sensitive species requirements, which are unlikely to be met under the selected alternative and much more likely to be met under the Alternative C.

So far under the status quo of FS management, (the selected alternative would be worse overall), sensitive species have continued to have downward population trends (including plants).

So it makes sense, and is advocated under NEPA, to use the actual listed and sensitive species most at risk as <u>MIS</u> to best represent their needs and that a species with similar needs, <u>not</u> to designate surrogates.

Page 292

Table 336 represents a logical fallacy and inaccurate use of the science in suggesting that mammal and *__bird__* *species selected as surrogate species can possibly represent the habitat needs of riparian mollusks and insects! This is ludicrous and a good example of the careless arbitrary lumping together of dissimilar species that makes the surrogate species approach unworkable and inaccurate use of the science. (E.G.s: How can MacGillivray's warbler represent mountain quail (different habitat types), much less a butterfly (silver-bordered fritillary)?*

The following are notes on the table from top to bottom:
American Marten, Pileated Woodpecker do not have similar habitat needs as Humped coin, Shinty Tail Coil (add riparian mollusks to Cool-Moist Forest/Medium-Large Trees - PNW Region Sensitive Invertebrates box on table).

Cassin's Finch, Northern Goshawk shares no similar habitat needs as Fir Pinweel

White-headed Woodpecker - Open canopy forest does not translate to meadow habitat for a butterfly species (Meadow Fritillary).

E.G. How do bighorn sheep and lark sparrow represent these dissimilar species? (striped whitesnake, spotted bat, pallid bat, ash-throated flycatcher - Barry's hairstreak, Intermountain sulphur).

How can northern harrier and sage thrasher represent the habitat needs of mountain goat? of western bumblebee? of salmon coil? Same argument for the next three rows in table.

__Page 293__

In the effects from each alternative discussion for sensitive species, no rational or methodology for "no upward trend toward federal listing" is given for the sensitive species already having population viability concerns and current or predicted downward population trends by *__definition__*. *(See FEIS p.291, par. 6) and sensitive species were* *__not__* *analyzed individually (see p.293, par.1) despite their already vulnerable status and the higher likelihood of their uplisting.*

ESA - Contributing to an upward trend in Federal listing
NEPA - Inadequate analysis and failure to disclose methodology

What is the basis for assuming "no increase in the level of concern for viability of the representative surrogate species"? (see p. 293, par. 2).

__Cumulative Effects__

"Fine scale" species are often those most at risk of extirpation, but they are lumped in with dissimilar surrogate species and relegated to later project level planning, with only vague (and usually *__not__* *mandated) assurance that management would be "towards (sic) the desired condition", (p. 293, par.2).*

So why was an apparently secure species chosen to represent more vulnerable species (Boreal owl)?

Likewise, why was "one of the most common and conspicuous breeding birds" ranked as "secure" in the U.S. and "apparently secure" in Oregon, selected to represent the habit needs of the more vulnerable sensitive Great Gray Owl, and very dissimilar mollusk (Fir Pinwheel) and butterfly (Johnson' s Hairstreak) species?

Page 294

Note the ease of management for selected surrogate species, as opposed to challenges posed to existing forest service management by listed, undesignated species such as gray wolf, Canada lynx, and Greater sage grouse (see p. 294 underlined sections in Karen's notes for E.G.s). *So when these surrogate species are used to stand in for listed and rare species, the net effect is not to pay any attention to the more specific habitat needs of the more vulnerable listed and rare species and not to manage for their recovery as required by the ESA and NMFA. Listed and rare species should have been selected as Management Indicator Species to ensure their monitoring and viability protection and better represent the habitat needs of species with similar habitat requirements.*

We have no objection to the Lewis' woodpecker as representative of habitat needs - it should do this as an MIS. However, most surrogates selected represent open forest conditions is a clear bias.

Page 296

Sensitivity to climate change by wolverine is a strong (and science-substantiated) argument for them being designated as an MIS. (See FEIS support, p.296, par.4).

Page 297

Greater Sage Grouse vulnerability to climate change supports their designation as an MIS also because they have already been petitioned for uplisting and are the focus of a new management plan. (See FEIS, p. 297, par. 3).

Management Indicator Species - Affected Environment
Actually MIS are used primarily to manage for viability of a wide range of species under NFMA.

These categories for MIS selection imply that selection of a broader range of MIS and more MIS than selected is intended by NMFA.

RE: Bullet point 1 - *E.G. Gray wolf, Canada Lynx, wolverine, fish species, plant species*
Bullet 2 - *E.G. Listed fish species, beaver, greater sage grouse, marten, lynx, pacific fisher - not just elk.*
Bullet 3 - *Great gray owl, Northern goshawk, etc.*
Bullet 4 - *E.G. Wolverine, Greater sage grouse, Canada lynx, beaver, marten, listed fish species.*

Bullet 5 - *E.G. listed fish, sensitive amphibians and snakes, sensitive insects, beaver, sensitive rare birds, plants at risk that indicate management impacts.*

The 1990 forest plants better followed NMFA intent by designating a broad range of 24 different species to represent the habitat needs of a much wider range of forest species and for <u>protection</u> of MIS viability and monitoring of MIS trends to ensure protecting the viability and habitat needs of MIS-represented species.

<u>Page 298</u>

Rationale for particular species being selected as MIS should be included within the <u>FEIS</u>, not just in the project record. Likewise, rationale for drastically reducing the number of MIS should be in the FEIS.

So why are population trends of even less representative "surrogate" species now expected to mirror trends of other species?

NEPA failure to include key analysis rationale in the FEIS.
We are opposed to arbitrary elimination of the following MIS from the 1990 Forest Plans' revision: American marten (ranked as vulnerable now across Oregon and especially in the Malheur); Northern three-toed woodpecker (still in decline across the region); primary cavity excavators (still great indicators of the snag and down wood needs of other species), and Northern goshawk (declining due to timber sales and human disturbance).

NFMA

We advocate for the following new wildlife species to be designated as MIS: Gray wolf, Canada lynx, wolverine, greater sage grouse, listed fish species, pacific fisher, Columbian spotted frog, great gray owl, American beaver, and representative sensitive-listed plants and insects.

<u>Page 299</u>

The FEIS is long on excuses for having no hard data (still) on most designated MIS and short on mandating required MIS monitoring, selecting a full range of representative MIS, and acting to find out more population status and trends for MIS and actually protecting their viability, as required by NMFA.

NMFA MIS - lack of monitoring required by NMFA - So the FEIS and forest plan revisions nonetheless fail to correct the acknowledged lack of long term data and monitoring for wildlife populations and habitats despite this amounting to gross negligence and violation of both NMFA and the ESA.

The Hayward et al. 2004 reference is only one study.

MIS "confusion" as defined by Region 6 FS.

This “in reality” approach obviously hasn't worked so far, as the FS’ “business as usual” model has failed to prevent further extreme habitat destruction, further MIS population declines, and more species’ uplistings. So its time to abide by legal NFMA requirements to monitor MIS and protect their populations (and that of other native vertebrae species) from continued decline.

Page 300

If the forest plan revision is supposed to update the forest plans with current science and new developments, why are no listed fish species, listed predators, and listed frogs represented as MIS? why aren't beaver MIS for riparian conditions?

RE: Par. 2:
According to whom? less representative “surrogate species” would be worse. No science citation or other basics is given for this conclusion. NFMA.

Management Indicator Species - Environmental Consequences (Alternative A)
“Surrogate” species are less well suited to protect species viability than MIS selected for sensitivity.

Only four species, and these four MIS, are far too limited to measure how well the Forest Plan is meeting “desired conditions”, providing a means to analyze effects on biodiversity, or saving as a reliable feedback mechanism during forest plan implementation, as promised for these MIS, let alone ensuring viability for a range of species that depend on similar habitat attributes, which MIS are supposed to represent. elk and deer are broadly distributed generalists that need security covers and thermal forage, and the two woodpeckers represent more open canopy with old growth ponders pine (whiteheaded) versus more closed canopy old growth.

Page 301

If there’s little or no hiding cover, there will be little or no elk, as anyone who spends much time in these forests knows, so hiding cover (and thermal cover) need to still be included as part of the FS definition of effective elk security.

Page 302

Rocky Mountain Elk Population Trend
NFMA - Legal requirement for monitoring MIS
Par. 2: *Reasons why the FS doesn't mind having elk as MIS.*

Page 305

Cover and Forage
NFMA - RE: retaining the 21’ DBH limit for logging live trees - Now the deficit includes trees 15-20’ DBH, as I’ve been arguing for years.

Page 306

Elk Security in Areas of Motor Vehicle Access

NFMA MIS - security cover for elk also biologically necessitates hiding cover from predators (including human hunters) and thermal cover from summer heat and winter storms, so increased logging will harm elk viability as an MIS. Further, elk are known to avoid cattle (p. 302, par. 2), so increased cattle use is also harmful to elk as an MIS. Alternative C is by far the most beneficial alternative for at least three of the four MIS selected - elk, mule deer, and pileated woodpecker, and would not harm white headed woodpecker, as it would specifically protect more large trees and old forest from logging.

Page 308

This use of Vegetation Dynamic Development Tool modeling is highly questionable, see the FEIS acknowledged limitations of VDDT modeling for elk cover assessment above.

RE: asterisk footnote on table 339:

How can a model possibly predict "years 200 to 500 average"? What does this mean?

Alternative C is the best for ensuring elk security of the offered alternatives - see FESI pp. 310 last par. - p. 311 first par. - based on the definition of elk security being used for this Forest Plan revision - see p. 310, par. 2.

Page 309

Table 340:

We are very concerned by the very low amount of "satisfying" (thermal and hiding) cover available for elk on the Malheur and Management Areas C#, C3A, and C8 on the Umatilla, which are already below existing forest plan standards- far below on the Malheur- yet satisfactory cover is still being logged with Forest Plan amendments to allow this.

Table 341:

projecting cover levels by decades with models is inaccurate use of the science, which cant predict self-thinning effects of insect defoliation, root rot, or wildfires, or rate of tree growth under extreme climate change and continued logging.

Page 314

RE: first par.

So increased cattle use will increase already very high competition between cattle and elk and deer for forage, especially where livestock grazing impacts are extreme, as in the southern Malheur.

Effects from Alternatives B, C, D, E, and F to Mule Deer Habitat

RE: Figure 47:

Using models to estimate the amount of forage available projected over 5 decades into the future is inaccurate use of the science, as rates and extent of forage growth cannot be predicted over *decades due to natural disturbances, climate change, and failure to account for already severely overgrazed (by livestock) areas.*

<u>Page 315</u>

FEIS acknowledgement of the need for hiding cover for deer.

<u>Mule Deer Population Trends</u>
Par. 2:
Mule deer declines

Par. 4:
Climate change is likely to exacerbate mule deer population declines.

<u>Page 318</u>

<u>Domestic Livestock Grazing in Relation to Mule Deer</u>
RE: Par. 4:
FEIS cited science support for selecting an alternative with <u>less</u> cattle use not <u>more</u> (as with Alternative C) due to cattle competition with both deer and elk (both MIS) for forage (see also p. 319 - par. 1).

<u>Page 319</u>

NFMA
FEIS' science support for <u>reducing</u> cattle use (best with alternative c noted) to improve viability for MIS elk and deer.

NFMA - RE: the need to retain fall PACFISH/INFISH protections.

<u>Page 320</u>

Limitations to data claiming adequate forage available for meeting current and projected levels of livestock and large native ungulates.

<u>Cumulative Effects to Management Indicator Species</u>
More science definitions for MIS purpose

<u>Page 340</u>

ESA Violation

Bottom of par. 3:*Oregon requirements for sage grouse.*

So the FS picked a less habitat-sensitive species (see Sage thrasher) to substitute for the Greater sage grouse to lessen greatly any management changes needed- that would better ensure

Greater sage grouse viability - even though its the <u>greater sage grouse</u> that is a candidate for uplifting and the focus of public concern. this is in violation of ESA requirements to avoid uplisting of candidate species - mostly by protecting the <u>candidate</u> species' critical habitat, not habitat for a surrogate species.

FEIS admission that Malheur and Wallowa Whitman populations of greater sage grouse are at risk and potentially at risk and that high profile conservation focus efforts have been for the greater sage grouse, not *the sage thrasher.*

<u>Page 344</u>

"Alternative C would lead to the most improved sage grouse habitat" - FEIS quote p.343, second to last par.

these positive protection measures for sage grouse should be added to Alternative C (as we support adopting Alternative C or better).

<u>Page 345</u>

<u>Wildlife Habitat Connectivity - Affected Environment</u>
These are all FEIS arguments for not eliminating designated wildlife connectivity corridors, in that designation is meant to ensure attention is paid to providing wildlife connectivity during planning. Without designation, connectivity concerns will be neglected, and critical wildlife connectivity lost, even as extreme climate change makes good wildlife connectivity crucial to the viability of many species.

<u>Page 349</u>

<u>Wildlife Habitat Connectivity - Environmental Consequences</u>
Land clearing/vegetation removal
Bullet 1: *elk, deer, wolverine, lynx*
Bullet 3: *e.g. goshawk, marten, pileated woodpecker, gray wolf*
Bullet 4: *e.g. goshawk, native plants*

Roads and traffic
Increased mortalities due to collisions - *gray wolf*
Presence of people of domestic animals
Bullet 1: *beaver, lynx, fisher, gray wolf, wolverine*
Bullet 2: *elk, wolverine*
Bullet 4: *gray wolf*

<u>Page 350</u>

Important FEIS admissions RE: NMFA
Wildlife connectivity

Page 351

Cumulative Effects to Wildlife Habitat Connectivity
This scanty cumulative effects analysis for terrestrial wildlife fails to consider the combined effects of the proposed alternative (with *increased* *logging, road use, and livestock grazing, and with combined other threats to wildlife species).*

Page 352

Cumulative Effects to Terrestrial Wildlife Species (Basinwide Scale)
Some of these changes in habitat and trend for species in Table 346 are badly outdated and no longer accurate, e.g.: marten are now declining and ranked as "vulnerable: in Oregon; Pileated woodpecker has started to decline - likely due to escalated and extensive and recent and current logging of suitable habitat based on density; wolverine are definitely not increasing and the species is now a candidate for uplisting.

Page 353

Wildlife and Climate Change
Terrestrial Species (Ruggerio et al. 2008)
The FEIS fails to note here that the threatened-listed Canada lynx is strongly dependent on climate change - threatened snowshoe hare is prey and itself is adapted to deep snow.

Page 354

Amphibians and Reptiles (Synthesized from Lind 2008)
These are strong FEIS science-backed arguments for designating at least one amphibian and one reptile and MIS. We suggest Columbian spotted from and the (WA) white-tailed snake. See also p.355.

Page 355

Birds
These climate change concerns for bird species support having migratory songbirds included as MIS.

STATEMENT AND REFERENCES REGARDING ISSUES RAISED IN PRIOR SUBSTANTIVE FORMAL COMMENTS

Because the Draft Decision, FEIS, and Proposed Revised Forest Plans are so different than the draft EIS and other documents that the public commented on, it is difficult to identify with precision where Objections were raised at the comment stage. Indeed, at least some of the Objections could not have been raised at the Comment stage because the issue Objected to did not exist at that time (e.g., 30 inch cut limit for grand fir). However, we have tried to identify where some of the Objections were raised by BMBP at the comment stage. Below is a list identifying, to the best of our availability, what pages the issues appeared on in comments on the DEIS submitted by Karen Coulter, Co-Director of BMBP (as those comments were transcribed by the Forest Service).

Note that this is not a complete list of where these issues were raised at the DEIS/Comment stage. BMBP submitted additional comments beyond those listed below, and Friends of the Clear Water also submitted comments.

- Violations of NEPA
    - Inadequate Range of Alternatives: 9, 21
    - Inconsistency with Purpose and Need: 4, 6, 7, 9–12, 15–18, 20, 22, 34, 38
    - Lack of significant difference between alternatives: 36
    - An illegal action alternative: 35
    - Inadequate analysis: 5–12, 14, 17, 18, 20–23, 25–29, 36, 37, 40, 41
    - Failure to identify preferred alternative: 15
    - Lack of enforceable standards: 34
    - Cumulative effects: 33, 34 (climate change), 36 (sensitive plants), 37 (invasive plants), 38 (indigenous people's rights)
    - Failure to use best available science: 8, 9, 16, 18, 25
    - Challenging use of one Forest Plan for three National Forests: 11
    - Lack of professional integrity: 3, 8, 15
    - Failure to disclose scientific controversy: 1, 3–6, 9, 12, 25
    - NEPA "productive and enjoyably harmony": 33
    - NEPA "prevent and eliminate damage" language: 34
    - Inaccurate use of the science: 3–18, 20, 23–25, 27, 44
    - Failure to disclose methodology, science cites: 5–11, 18, 25
- Violations of NFMA
    - Lack of enforceable standards and guidelines: 2, 22, 34–36, 38
    - NMFA diversity of invertebrates and plants: 30, 33
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