OREGON WILD

Formerly Oregon Natural Resources Council (ONRC)

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9 Oct 2017

TO: PNW Regional Forester, Objections Reviewing Officer
ATTN: 1570 Objections
VIA: objections-pnw-regional-office@fs.fed.us

Subject: 36 CFR 218 objection of the Camp Lick Project

Dear Forest Service:

In accordance with 36 CFR 218, Oregon Wild hereby objects to the project described below.

DOCUMENT TITLE: Draft Decision Notice and Finding of No Significant Impact and Environmental Assessment, Camp Lick Project and Forest Plan Amendment

PROJECT DESCRIPTION:

- 14,910 acres of thinning
- Fuel reduction along roads
- 80 acres of conifers removed from aspen stands
- 25-35 mmbf of timber volume
- Road work (26 miles less open road access after implementation)

Table 5. Comparison of alternatives

Proposed activities	Alternative 1 (no action)	Alternative 2 (proposed action)
Stand improvement commercial thinning	0 acres	8,700 acres
Reduce late seral (included in stand improvement commercial thinning acres)	0 acres	1,200 acres
Lodgepole treatments	0 acres	600 acres
Stand improvement biomass thinning	0 acres	2,250 acres
Western white pine restoration	0 acres	150 acres
Juniper encroachment treatment	0 acres	730 acres
Biomass removal	0 acres	10,950 acres
Aspen restoration	0 acres	80 acres
Ecological riparian treatments	0 acres	2,300 acres

PROJECT LOCATION (Forest/District): Blue Mountain Ranger District, Malheur National Forest, Grant County.

NAME AND TITLE OF RESPONSIBLE OFFICIAL: STEVEN K. BEVERLIN, Forest Supervisor, Malheur National Forest

LEAD OBJECTOR: Oregon Wild

REQUEST FOR MEETING TO DISCUSS RESOLUTION: Oregon Wild hereby requests a meeting to discuss potential resolution of the issues raised in this objection.

NARRATIVE DESCRIPTION OF THOSE ASPECTS OF THE PROPOSED DECISION ADDRESSED BY THE OBJECTION; SPECIFIC ISSUES RELATED TO THE PROPOSED ACTION:

1. **We object to the draft DN because it does not clearly specify the terms of the proposed plan amendment**. We had a hard time deciding whether or not to object because we could not tell what the proposed decision was in terms of large tree removal. The exact language of the plan amendment is not specified in the draft DN, and the draft decision document provides conflicting information about the plan amendment, suggesting that the amendment allowing removal of large trees is open ended, even though the main rational is protecting legacy trees.

   The plan amendment (as described in the draft DN (p 22)) appears to be written to allow removal of large trees regardless of whether they are in direct competition with legacy trees, but the draft DN (p 29) discusses "issues and concerns" about this plan amendment and says ...

   "My decision will allow removal of young (less than 150 years old), relatively large (greater than or equal to 21 inches DBH) grand fir, and Douglas-fir trees in the grand fir and Douglas-fir plant association stands in the stand improvement commercial thinning units within the Warm Dry PAG (approximately 4,700 acres) that are competing with older (150 years old or older) ponderosa pine and western larch trees causing competition stress and increasing the risk that the older trees may die as a result of insects, drought, or wildfire." Draft DN (p 41) also mentions the issue of competition as a rationale for the amendment. "Grand fir and Douglas-fir trees are competing with older ponderosa pine and western larch, causing competition stress"

   Page 10 of the response to comments says “All grand/white fir older than 150 years old is proposed for retention and where individual grand/white fir are not threatening older pine or western larch they would be considered for retention …” Page 34 of the Response to Comment summarizes our comment as “The only amendment that is ecologically justified is to remove young shade-tolerant trees from within the dripline of legacy trees,” then responds “this is generally consistent with the proposed action. … Alternative 2 proposes to allow removal of young (less than 150 years old), relatively large (greater than or equal to 21 inches DBH) grand fir and Douglas-fir trees in the grand fir and Douglas-fir plant association stands in the stand improvement commercial thinning units within the Warm Dry PAG (approximately 2,600 acres) **that are competing** with older (150 years old or older) ponderosa pine or western larch trees …"

However, these comment responses appear to be contradicted on page 37 of the Response to Comment which seems to reject the idea of limiting the plan amendment to large-young trees in direct competition with legacy trees. ("limiting removal of greater than 21 inch grand fir/white fir to trees in direct competition with large fire resistant tree species would still maintain an inflated percentage of shade tolerant fir trees across the Camp Lick landscape.") The draft DN and EA do not say how much the "percentage of shade-tolerant tree cover across the landscape" would be affected by retaining large trees that are not in competition with legacy trees. We think this would be an almost immeasurably small percentage given that the FS is allowed to remove the vast numbers of small shade-tolerant trees, plus large ones that are in direct competition with legacy trees.

The Camp Lick NEPA analysis also does not provide any real rationale for amending the forest plan to allow logging large trees that are not in direct competition. The Response to Comment (p 36) says "The rationale for the removal of trees greater than or equal to 21 inches diameter at breast height is detailed in the FEA chapter 1, Need for Amending the Malheur Forest Plan…" "But that section of the Final EA mostly just describes the process for amending the plan, it does not provide a compelling rationale based in site specifics of the project area. The Final EA (p 18) says "Based on the guidance described above, site-specific conditions in the Camp Lick planning area, and relevant forest-specific information and data, the Forest Service has determined that there is a need to change the existing Malheur Forest Plan." But the part of the Final EA (p 23) that specifically addresses removal of large trees does not say anything about the need to alter the species composition, it just talks about the adverse effects of competition between large young shade-tolerant trees and "older ponderosa pine and western larch." The record does not provide any evidence that the FS carefully weighed the trade-offs between altering species composition and retaining large trees, or how those trade-offs might be resolved by focusing large-young tree removal to the immediate vicinity of legacy trees.

Oregon Wild asked the FS to document consideration of the guidance memos that two regional foresters have issued with respect to amendments allowing removal of large trees. The Response to Comment (p 39) refers to Chapter 1 of the EA, but Chapter 1 of the EA just notes the existence of the memos and recites a few of their terms. This section of the EA does not document careful consideration of these memos and how they may or may not apply to the particulars of this project, or show consistency.

2. **We object to the plan amendment allowing removal of large trees (>21" dbh), especially those large trees that are NOT in direct competition with large legacy trees, such as pine, larch, and aspen**. The FS has failed to provide a clear and

compelling rationale for this broad plan amendment. The FS has not made a showing that the goal of restoring species composition is more important than the goal of restoring large trees across the landscape. The FS is taking the goal of restoring species composition to an unnecessary extreme by removing large trees. The FS can harmonize both goals by removing lots of small shade-tolerant trees less than 21" dbh, plus large young shade-tolerant trees where they are in direct competition with legacy trees.

Oregon Wild comments on the PEA noted the "challenges" noted by Drs. Jerry Franklin & Norm Johnson associated with proposals to remove large trees in order to shift species composition.

> Deciding how many and which larger grand or white fir to retain and which to remove can be a challenging question for managers, stakeholders, and marking crews, particularly when there are no diameter limits (e.g., trees >21" dbh) or where diameter limits have been suspended.
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> …
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> **… what are the most appropriate larger grand/white firs to retain in restoration treatments? First, retain any grand/white fir older than approximately 150 years of age**. Guides for visual identification of these older trees are under development and initial results are reported above. With larger grand/white firs that are less than 150 years of age, **consider retaining individuals that are not threatening older pines or western larches either as fuel ladders or competitors, especially in Moist mixed-Conifer Stands**.

Franklin, J.F., Johnson, K.N., et al 2013. Restoration of Dry Forests in Eastern Oregon – A Field Guide. The Nature Conservancy, Portland, OR. 202 pp. http://nature.ly/dryforests. The "challenges" noted above are an important reason to prepare an EIS before deviating from the Eastside Screens and especially before going beyond the narrow exception for removing large young trees that are in direct competition with legacy trees.

Franklin & Johnson's recommendations are supported by other experts, and by numerous other forest restoration on the eastside of Oregon (cited in Oregon Wild comments on the PEA). Hessburg et al 2015 recommend: "To improve the longevity of larger early seral trees, restorative activities would include thinning and removing neighboring shade-tolerant trees to reduce competition for water and nutrients, and removing nearby surface and ladder fuels to reduce fire intensities that would threaten their long-term survival." Paul F. Hessburg . Derek J. Churchill . Andrew J. Larson . Ryan D. Haugo . Carol Miller. Thomas A. Spies . Malcolm P. North . Nicholas A. Povak . R. Travis Belote . Peter H. Singleton. William L. Gaines . Robert E. Keane . Gregory H. Aplet . Scott L. Stephens . Penelope Morgan, Peter A. Bisson . Bruce E. Rieman . R. Brion Salter . Gordon H. Reeves. 2015. Restoring fire-prone Inland Pacific landscapes: seven core principles. Landscape Ecology, May 2015. DOI 10.1007/s10980-015-0218-0
http://link.springer.com/content/pdf/10.1007%2Fs10980-015-0218-0.pdf

Before considering any amendment to the diameter limit in the Eastside Screens the Forest Service must document its consideration of, and consistency with, the available guidance about when such amendments might be appropriate. In this case, the most recent guidance is Regional Forest James Peña's September 10, 2015 guidance to Forest Supervisors regarding site-specific amendments to the Eastside Screens. This guidance says "The Eastside Screens were **intended to conserve old forest abundance and wildlife habitat** in late and old structural stages. **I emphasize these intentions remain in place**. The direction in this letter and its enclosure, which provides additional information regarding the importance of maintaining Screens …" (emphasis added).

Peña's 2015 memo is a revision of the 2003 Goodman memo. The bulk of Peña's guidance regards the *site-specificity* of plan amendments. Other important considerations regarding plan amendments for removal of large trees are addressed in Regional Forester Linda Goodman's June 11, 2003 memo to eastside Forest Supervisors. The NEPA analysis for this project needs to provide a clear explanation of how this project meets the requirements of the 2003 guidance memo which says -

> "science findings ... reinforce the importance of retaining and recruiting large, old trees in the eastside landscape. ... The objective of increasing the number of large trees and LOS stands on the landscape remains. Economic considerations are important but are not considered adequate justification alone for conducting harvest activities in LOS stands. I encourage you to coordinate with the Regional screens team and Regional planning staff as site-specific Forest Plan amendments are developed."

The memo does not recommend changing the underlying restoration goal of the screens, but rather "to consider site-specific Forest plan amendments where this will better meet LOS objectives by moving the landscape towards HRV, and providing LOS for the habitat needs of associated wildlife species."

The enclosure to the 2003 Goodman memo says "These findings reinforce the importance of retaining and recruiting large, old trees in the eastside landscape, ... It is critical that silvicultural prescriptions provide for large snags in adequate numbers (as indicated by DecAID and other tools) through time to provide habitat for these species." This indicates not only that retention of large trees continues to be important, but also indicates that the FS must use quantitative methods (such as DecAID) to determine when adequate numbers of large snags and large green recruitment trees are available.

The enclosure to the RF's memo specifically mentions five wildlife species that need adequate numbers of large trees that turn into large snags,

> "Pygmy nuthatch: 18-34 inches or larger
> White-headed woodpecker: 18-36 inches or larger
> Pileated woodpecker (an MIS): 20-35 inches or larger
> Flammulated owl: 6-53 inches or larger [and]
> Fisher ... Data from DecAID indicate that 70 percent of fishers use snags between 27 and 47 inches DBH. Radio telemetry studies indicate that snag

densities in telemetry locations of fishers are significantly greater than those of random sites."

Many additional species are also intended to benefit from the LOS restoration standards in the Eastside Screens, and DecAID provides a long list of key ecological functions of snags in Ppine/Doug fir forests. http://www.fs.fed.us/r6/nr/wildlife/decaid/queries/pp-df-f/smll-md-trs/KEF/KEF_snags.html Any amendments proposed for removal of large trees must disclose whether and how the needs of these species will be met over time.

The NEPA analysis must take a hard look at the habitat needs of primary cavity excavators over the long term. It is not enough to meet the needs of woodpeckers for a few years after harvest. Maintaining viable populations of primary cavity excavators will require retention of virtually all the overstory trees so that there is a long-term supply of snags and dead wood.

3. **We object to the removal of large trees in cool/cold forest types under Scenario B of the Eastside Screens** because removal of large trees does not "enhance LOS structural conditions and attributes" as required by the Eastside Screens. The Response to Comments fails to address Oregon Wild comments complaining that "The EA does not clearly explain how removal of large trees from LOS enhances LOS conditions and attributes …" Our comments pointed out that large trees are important attributes of LOS forests. We can agree that removing small trees may have beneficial effects, but removing large trees will degrade rather than enhance LOS structural attributes.

4. **We object to removal of large trees that are dying**. Removal of large dying trees violates the LRMP, as amended by the Eastside Screens. Natural tree mortality is a natural and beneficial structural attribute of LOS forests. The Eastside Screens only allow removal of large trees that are already dead (and even that allowance is ill-advised because a wealth of science dead trees are great habitat and dead trees are more important than recognized when the Eastside Screens were adopted).

5. **We object to the merged analysis of the plan amendments allowing logging in LOS forests and the plan amendment allowing removal of large trees.** Thinning from below in LOS forests makes sense, whereas removing large trees that are not in direct competition with legacy trees does not. The rationale in the draft DN blurs these two proposed actions and makes it seem like they are inseparable and that if one of these actions has a sound rationale then both actions are justified. This is not the case. There is a sound rationale for thinning from below to remove encroaching conifers from LOS forests, but there is no compelling evidence to support the proposed removal of large trees that are not in direct competition with legacy trees because there is not showing that the goal of restoring species composition is more important than the goal of conserving and restoring large trees as required by the Eastside Screens. It is arbitrary and capricious for the FS to fail to provide a compelling rationale for each proposed action.

6. **We object to the inadequate NEPA analysis of the effects of commercial logging on the unique ecological values of unroaded areas.** The NEPA analysis is flawed in two ways. First, the inventory of unroaded areas applied arbitrary exclusionary criteria, e.g., a 300' buffer along roads. This has the effect of shrinking many unroaded areas below the 1,000-acre threshold and excluding them from consideration for more thoughtful conservation where natural processes are allowed to do the bulk of the ecological work. Second, the analysis failed to disclose the disproportionate ecological values provided by unmanaged/unroaded areas >1,000 acres and the disproportionate adverse effects of commercial logging and road construction that interfere with natural ecological processes.

   The Response to Comments on the PEA do not adequately respond to Oregon Wild comments on this issue. The Response to Comment (p 87) describes "other undeveloped lands" as "acres of land with no history of harvest activity, do not contain forest roads, and are not designated as wilderness area, identified as an inventoried roadless area, or included in the areas with wilderness characteristics inventory." The FS inventory of undeveloped lands did not use this definition. The inventory arbitrarily excluded large buffers along roads regardless of whether there is any evidence of a "history of harvest activity."

   The Response to Comment (p 88) goes on to say "The 300 foot buffer is applied to roads to account for the road itself, which can be approximately 12 to 24 feet in width, these areas may have danger tree felling activities, provide increased use for fire wood cutting, and areas 300 feet or closer have opportunities for solute [sic] limited by visual and auditory impacts from the roads." This is improper for several reasons. First, there might be stumps, but there is no evidence in the record of such stumps. Second, a few stumps does not really wreck an unroaded area and should not disqualify such areas from the inventory. Third, "solitude" is just one of the values associated with unroaded areas. Any other values are not affected by the nearby road such as carbon storage, water quality, soil conservation, some habitat values, etc. Forest Service policy is to conduct a broad and inclusive inventory to identify unroaded areas. If, after identifying unroaded areas, the FS wants to grant themselves the discretion to treat fuels and hazard trees within 100 feet of roads, that is an option, but the FS can start by conducting a faulty inventory that denies the existing of roadless values that actually/factually exist on the ground.

   The Response to Comment failed to respond to our comments urging the FS to consider impacts of logging on unroaded areas as a NEPA issue. The FS relies too much on their internal views about what is a roadless area, but this is really a NEPA issue, and to fulfill that requirement the Forest Service needs to look at the wealth of new science from outside the agency indicating that unroaded areas 1,000 acres and larger are ecologically significant, such as the 1997 letter to President Clinton, 136 scientists said:

   > There is a growing consensus among academic and agency scientists that existing roadless areas–irrespective of size–contribute substantially to maintaining biodiversity and ecological integrity on the national forests. The

> Eastside Forests Scientific Societies Panel, including representatives from the American Fisheries Society, American Ornithologists' Union, Ecological Society of America, Society for Conservation Biology, and The Wildlife Society, recommended a prohibition on the construction of new roads and logging within existing (1) roadless regions larger than 1,000 acres, and (2) roadless regions smaller than 1,000 acres that are biologically significant…. Other scientists have also recommended protection of all roadless areas greater than 1,000 acres, at least until landscapes degraded by past management have recovered…. As you have acknowledged, a national policy prohibiting road building and other forms of development in roadless areas represents a major step towards balancing sustainable forest management with conserving environmental values on federal lands. In our view, a scientifically based policy for roadless areas on public lands should, at a minimum, protect from development all roadless areas larger than 1,000 acres and those smaller areas that have special ecological significance because of their contributions to regional landscapes.

Letter to President Clinton from 136 scientists (Dec. 10, 1997).
https://docs.google.com/open?id=0B4L_-RD-MJwrRzhFcm5QcFR0MHM.
This information and much more was provided in our comments on the PEA.

NEPA requires disclosure and analysis of relevant environmental factors. As shown in the scientific information cited above, the presence of large (>1,000 acre) unroaded areas represents a relevant environmental factor. <u>Even if these areas are not eligible for wilderness, they are nonetheless significant and worthy of NEPA disclosure and analysis</u>.

While it is true that the agency does not have an explicit legal obligation to protect these uninventoried areas (yet), the agency does have a legal obligation pursuant to NEPA to describe the environmental consequences of logging and road building in ecologically significant areas. The National Forest Roadless EIS described several qualities of roadless/unroaded areas that are not limited to those over 5,000 aces and that happen to have been inventoried in the RARE process. The agency should not be dismissive of the need to do NEPA analysis of the impacts of their activities on uninventoried roadless/unroaded. To fulfill its NEPA obligation, the agency must look at the ecological extent of roadlessness. The agency should not rely on the arbitrary roadless boundaries drawn as part of RARE.

The agency must not dismiss concerns about uninventoried roadless areas simply because such unroaded areas are "not federally recognized." Whether or not such unroaded areas were inventoried by the Forest Service under RARE II is immaterial under NEPA which requires the FS to consider and address all relevant environmental information. The fact that an activity may impact an unroaded area in an ecologically relevant manner, triggers NEPA duties that transcend the roadless rule and Appendix C of the LRMP. The FS must recognize that it is not infallible. Some areas are *de facto* roadless even though they were arbitrarily left out of the RARE II inventory. Also, the 5,000 acre limit for inclusion in the RARE II inventory is based on an arbitrary limit in the Wilderness Act, but has nothing to do with the ecological values of roadlessness that must be considered under NEPA. The 5,000 acre limit arbitrarily excludes ecologically significant areas. In fact, any unroaded area 1,000 acres or larger may have ecological significance. Remember, NEPA requires consideration of all relevant information. The FS does not have authority to hide behind a 30 year old roadless inventory to conclude that smaller roadless areas are not biologically relevant to decisions being made today.

7. **We object to new road construction**, because there are already too many roads on the landscape. The FS failed to consider an alternative that does not build new roads. Roads have significant and long-term adverse impacts on soil, water, habitat. The FS failed to consider ecologically preferable alternatives that would leave inaccessible areas untreated, or treated non-commercially, to accomplish a more optimal mix of ecological benefits from both treatment, non-treatment. The Response to Comment (p 8) says "The restriction on constructing temporary roads would limit opportunities to treat some parts of the landscape to the needed level while meeting the need to reduce fuel loading density and connectivity." However, there is no way of know if these assertions are accurate because the EA failed to consider an alternative that did not build roads. The FS cannot make unsupported assertions to justify its refusal to consider all reasonable alternatives.

8. **We object to heavy thinning that retains too little basal area**. The NEPA analysis failed to consider alternatives that would leaving more trees on the landscape to provide more options for the future in terms of large tree recruitment, large snag recruitment, suppression of the growth of future ladder fuels, the possibility of future entries, providing better habitat for species that prefer more tree cover and complex dead wood habitat, increase carbon storage, and ecological benefits of natural mortality such as selecting for more fit genetic traits in this biophysical setting, etc…

   Oregon Wild comments on the PEA made the point that the agency should avoid reducing stand density lower than is appropriate to meet the full suite of ecological objectives, including wildlife cover, perpetuating mortality processes that create and sustain valuable habitat features, etc. We are concerned that the agencies' stocking guides were created and intended to be used as a tool to avoid mortality which is clearly inconsistent with ecosystem management. ("To preclude serious tree mortality from mountain pine beetle, western dwarf mistletoe and perhaps western pine beetle, stand densities should be maintained below the upper limit of the management zone" Powell 1999, https://fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev7_016034.pdf) Healthy forests require dead trees, sometimes in abundance, in order to meet the needs of diverse wildlife and provide full suite of ecosystem functions. Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GISdata/docs/chapter24.pdf

A comprehensive restoration approach requires focusing not just on live trees, but also on the full suite of ecological processes including density dependent mortality processes that create and recruit snags and dead trees as a valuable feature of eastside forests. We urge the agency not to manage for tree vigor and minimum stocking levels because it will not provide enough green trees for recruitment of snags through time. This is a critical issue given that the current standards for snag habitat are outdated and fail to provide adequate levels of snags and dead wood, and adequate levels of green trees needed to recruit those snags through time.

The Response to Comment (p 11) basically just says "we're not thinning heavily across the entire project area" but the EA does not disclose what forest structural types are over-represented and which are under-represented in the treated and untreated parts of the planning area. Have the areas not proposed for treatment been treated in the past? Are they slated for treatment in the future? Are those areas even forested? Do they currently contain a lot of large trees? This information is critical to make sense of the proposal in light of the Forest Service efforts to increase "pace and scale" of commercial logging. Nor does the EA provide a clear rationale why it is desirable to control mortality in such a large fraction of the project area, and the cumulative effects of doing so (e.g., "pace and scale") across a large fraction of the entire Blue Mountains. The EA does not disclose the trade-offs and adverse effects of heavy thinning in terms of carbon storage, dead wood habitat, stimulating the growth of ladder fuels, and interfering with natural mortality and the evolutionary search/selection for the fittest traits.

9. **We object to the FONSI**. This is a large project with potentially significant impacts thus requiring careful consideration in an Environmental Impact Statement. Indicators of significance include: logging large trees, logging in unroaded areas, building new roads with long-term impacts, greenhouse gas emissions.

   The FONSI is erroneous because:

   - The forest plan amendment allowing removal of large trees across large areas significantly increases the "intensity" of the effects of this proposal.
   - New and significant trade-offs are caused by removal of large trees, such as habitat loss, carbon loss, greater impacts to soil and water, etc.
   - "Unique characteristics of the geographic area" include the unroaded areas.
   - Removal of large trees for restoration purposes is challenging and "controversial."
   - Whether there are real net restoration benefits from removal of large trees is "highly uncertain."
   - This proposed plan amendment is potentially "precedent setting" because few if any such plan amendments to date have gone beyond large-young trees in direct competition with legacy trees.
   - This project has potentially significant "cumulative effects" because it is part of a program to increase the pace and scale of restoration on the eastside.

- The project "threatens to violate federal laws intended to protect the environment," in fact, this project explicitly waives such requirements (e.g., the Eastside Screens).

Another important indicator of significant is the significant (and often unexamined) trade-offs inherent in a large forest management project like this. Commercial logging as a tool for restoration captures mortality and exports valuable habitat features from the forest. Commercial logging, especially when large trees will be removed, comes at the expense of other important ecological objectives, including: long-term recruitment of large trees, large snags, large wood, large instream wood, large persistent carbon, dense forest cover, unimpaired soil and water quality.

Land management inevitably involves trade-offs among competing uses of the public lands. The agency must avoid portraying the effects of the proposed action in disproportionately positive terms, while describing the effects of no action in disproportionately negative terms. NEPA requires disclosure of the trade-offs among competing uses.

"[F]uel-reduction activities may have undesirable environmental effects (e.g., the need for periodic treatments, introduction of weeds, soil disturbance, or maintenance of some roads)." Spies, Thomas A.; Hemstrom, Miles A.; Youngblood, Andrew; Hummel, Susan. 2006. Conserving old-growth forest diversity in disturbance-prone landscapes. Conservation Biology. 20(2): 351-362. http://www.fs.fed.us/pnw/pubs/journals/pnw_2006_spies001.pdf.

The agency should look for tools to help illuminate and transparently resolve trade-offs. "An integrated planning process focuses on multiple-objective planning rather than single-objective planning from the beginning of the project. It favors a transparent and interactive process that offers opportunities for understanding ecosystem complexity, stakeholder positions, and clear articulation of decision trade-offs and benefits." Jain, Theresa B.; Battaglia, Mike A.; Han, Han-Sup; Graham, Russell T.; Keyes, Christopher R.; Fried, Jeremy S.; Sandquist, Jonathan E. 2012. A comprehensive guide to fuel management practices for dry mixed conifer forests in the northwestern United States. USDA Forest Service Gen. Tech. Rep. RMRS-GTR-292. 2012 http://www.firescience.gov/projects/09-2-01-16/project/09-2-01-16_09-2-01-16_rmrs_gtr292web.pdf Chapter 7 of this document highlights the importance of clearly articulated project objectives, quantitative metrics defining success across multiple objectives, "a format to display the benefits and trade-offs among the metrics...," and a clearly articulated rationale linking treatment prescriptions to desired objectives.

> Project-level planning and implementation pursues management activities in accordance with forest plans to enhance flows of particular ecosystem services—to improve a specific fish or wildlife population, for example, or reduce the likelihood that natural disturbance (e.g., wildfire) might adversely affect flows of ecosystem services. However, many ecosystem services and

> the associated landscape conditions from which they derive are interrelated in either conflicting or synergistic ways such that changes in one service necessarily involve changes in another service. In some cases, increased flows of one service may only be possible by accepting decreased flows of another service. Evaluating and communicating expected management outcomes necessarily must account for these interrelationships and the tradeoffs—the exchange of one level of service for another—made necessary when implementing a project that will affect multiple ecosystem service flows. Conceptually, tradeoffs among ecosystem services are best illustrated by using the economic concept of "production possibility frontiers" (e.g., Bowes and Krutilla 1989: 49, Stevens and Montgomery 2002). Production possibility frontiers show the combinations and levels of ecosystem services that can be produced on a landscape given that landscape's capacity to produce those services (e.g., its size and biophysical features) and management inputs (e.g., labor) and capital improvements (e.g., roads, trails, culverts).
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> Understanding the production possibilities for a given landscape enables managers to identify and weigh the possible output combinations that might be expected on a given landscape, and may make it more feasible to avoid unnecessary tradeoffs.
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> Another important step in evaluating forest management tradeoffs is characterizing how valued ecosystem services are likely to change in response to management activities under consideration. … Ideally, analysis of the likely outcomes of landscape management would be based on credible scientific information linking expected changes in ecosystem services to specific changes in landscape conditions and processes resulting from proposed plans and projects. The quantity and quality of scientific information available for evaluating management effects in this way can differ depending on how well particular ecosystem processes are understood and how well they can be described by ecologists and biophysical scientists as changes in ecosystem services.
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> … [M]any economists refer to a need for ecological production functions (e.g., Polasky 2008) that link the production of a given ecosystem service in space and time to landscape conditions and processes necessary to its production. …
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> Whether dealing with empirical data and models or qualitative data and narratives, evaluating and communicating expected management outcomes calls for managers to (1) identify key landscape conditions that affect the quantity and quality of valued ecosystem services; (2) characterize key relations between those landscape conditions and the levels of ecosystem services produced; and (3) describe the degree of uncertainty in the data and models used to predict management outcomes. This process includes describing the spatial and temporal aspects of expected outcomes.

Kline, Jeffrey D.; Mazzotta, Marisa J. 2012. Evaluating trade-offs among ecosystem services in the management of public lands. Gen. Tech. Rep. PNW-GTR-865.

Portland, R: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 48 p. http://www.fs.fed.us/pnw/pubs/pnw_gtr865.pdf.

> [W]hile specific structural attributes of forest ecosystems have been correlated with certain species, it is uncertain how such species will respond to treatments designed to recreate these features. There is always the possibility that in our attempt to create a structural attribute we think is important, we eliminate another attribute that is equally important, but unrecognized. One example is that attempts to restore spotted owl habitat by heavily thinning to accelerate the development of large diameter nesting trees could actually delay spotted owl recovery by reducing production of the large down wood utilized by the species it preys upon (Forsman et al., 1984; Carey, 1995; North et al., 1999). Similarly, heavily thinning stands to accelerate the development of marbled murrelet nesting trees also create open stands with a dense understory that is ideal habitat for a number of corvid species that prey on marbled murrelet nest eggs (USFWS, 2010). Riparian thinning efforts to create long-term supplies of very large diameter instream wood that can initiate complex wood jam formation (e.g., key pieces) are also likely to reduce the supply of large diameter wood that will create pools (Beechie and Sibley, 1997; Beechie et al., 2000; Fox and Bolton, 2007). Thus, we suggest that any efforts to actively restore riparian forests for the benefit of certain species should be treated as scientific experiments and proceed cautiously, skeptically, and with robust pre- and post-treatment data collection efforts. Hypothesized effects of thinning on riparian forest structure and the use of that structure by targeted species should be tested against empirical data.

Pollock, Michael M. and Timothy J. Beechie, 2014. Does Riparian Forest Restoration Thinning Enhance Biodiversity? The Ecological Importance of Large Wood. Journal of the American Water Resources Association (JAWRA) 50(3): 543-559. DOI: 10.1111/jawr.12206. http://oregon-stream-protection-coalition.com/wp-content/uploads/2014/07/Pollock-and-Beechie.-2014.-Riparian-thinning-and-biodiversity.pdf

10. **We object to the inadequate non-quantitative analysis of effects to snag habitat.** The Response to Comment (p 3) says "Snag numbers are expected to be maintained or slightly decrease in the short- to mid-term, and then increase in the long-term (FEA, pages 232-236)." The EA does not make this showing. Table 28 (EA p 232) shows snag recruitment expected under Alt. 2 but fails to compare the effects of the proposed action to the effects under the no action alternative. It is much more likely that the no action alternative will produce more snag habitat over time, because it would retain far more trees that would continue to grow large and retain far more natural mortality processes that would recruit snags and dead wood. Commercial logging is a subtractive endeavor. It is mathematically implausible to remove large numbers of commercial sized trees, including thousands of trees >21" dbh (and tens of thousands of medium-sized trees that are still growing) and NOT have an adverse effect on recruitment of large snags. See Heiken, D. 2012. Thinking About Dead Wood in Managed Landscapes

https://www.dropbox.com/s/m4671mhsstg61ss/dead_wood_slides_2.pdf?dl=0 (attached).

This unsupported assertion that logging will enhance recruitment of snag habitat is used to justify the decision to amend the Eastside Screens allowing removal of large trees (see Response to Comment #79, page 36). This is not supported by the evidence, and it is a good reason to prepare an EIS to take a hard look at this trade-off. Commercial logging will remove thousands of large trees, and tens of thousands of medium-sized trees that would grow large over time. Each one of these trees could someday be an ecologically valuable large snag that contributes to restoration of LOS structural attributes, but NOT if it leaves the forest on the back of a log truck.

This graph from the Curran Junetta Thin EA shows that heavy thinning delays by more than 60 years the attainment of habitat objectives for large snags (i.e. mid-point of the gray band representing 30-80% tolerance level).

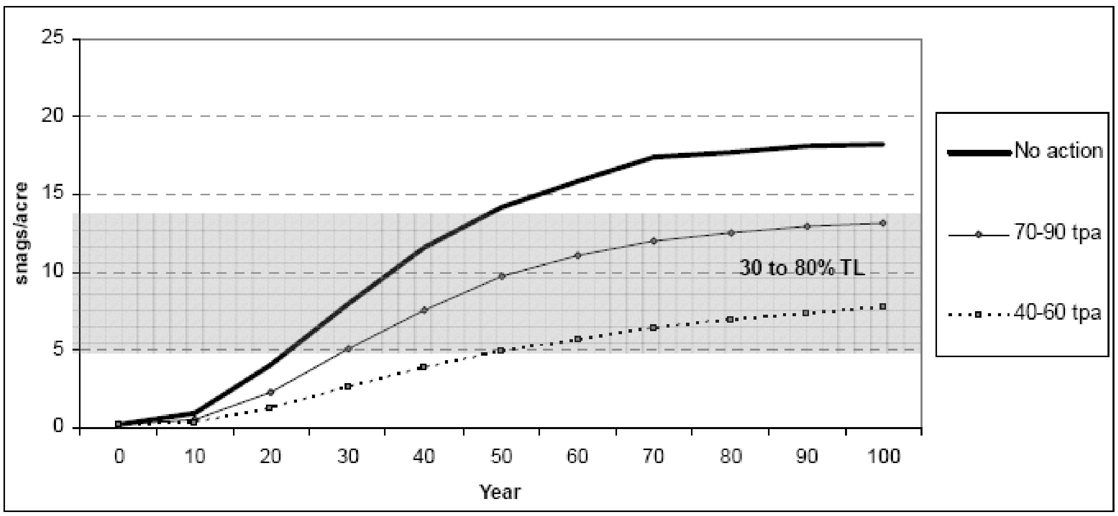

Figure 15. Short and long-term changes to ≥20" dbh snags.
http://a123.g.akamai.net/7/123/11558/abc123/forestservic.download.akamai.com/11558/www/nepa/32805_FSPLT2_053506.pdf.

The EA also failed to recognize the information indicating the value of unroaded areas for snag recruitment. Korol et al (2002) highlighted the fact that unroaded areas are unique in their contribution to dead wood habitat because they are one of the few places on the landscape where we allow natural processes of forest growth (and mortality) to proceed without intervention by commercial logging. Korol et al (2002) estimated that even if we apply enlightened forest management on federal lands in the Interior Columbia Basin for the next 100 years, we will still reach only 75% of the historic large snag abundance, and most of the increase in large snags will occur in roadless and wilderness areas. Jerome J. Korol, Miles A. Hemstrom, Wendel J. Hann, and Rebecca A. Gravenmier. 2002. Snags and Down Wood in the Interior Columbia Basin Ecosystem Management Project. PNW-GTR-181.
http://www.fs.fed.us/psw/publications/documents/gtr-181/049_Korol.pdf

SUGGESTED REMEDIES THAT WOULD RESOLVE THE OBJECTION:
Oregon Wild respectfully requests that the Forest Service withdraw the recommended project and —

1. Issue a clear final decision that:
   a. avoids commercial logging and road building in roadless and unroaded areas >1,000 acres, and
   b. protects large trees that are not in direct competition with legacy trees and aspen trees,
   c. retains more basal area, and
   d. avoids new road building; or
2. Prepare a new EIS to address the significant impacts and unresolved conflicts and fully complies with the requirements of NEPA and the CEQ regulations and addresses the specific concerns expressed below.

DESCRIBE HOW THE OBJECTIONS RELATE TO PRIOR COMMENTS:
All of the items listed in the “narrative description” above were raised in Oregon Wild’s April 2017 comments on the Preliminary Environmental Assessment, except #1 and #9 which were not ripe for comment until we saw the draft DN and FONSI.

Sincerely,

Doug Heiken

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