Carolyn Wisdom, District Ranger
Silver Lake Ranger District
P.O. Box 129
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Dear Ms. Wisdom,

On behalf of the John Muir Project of Earth Island Institute, I am submitting the following comments on the Toolbox "Fire Recovery" project (Toolbox project):

1) Your forest plan requirement prohibits you from logging any live trees over 21" dbh. Yet you propose to log any trees with less than 20% "bright green crown". DEIS, p. 2-12.

a) In the FEIS, please provide the scientific hard data (citations and a description of the findings of each cited study) which demonstrates that the great majority of BOTH ponderosa pines and white firs over 21" dbh will die with more than 80% crown scorch. PLEASE RESTRICT YOUR CITATIONS TO SCIENTIFIC STUDIES (NOT LITERATURE REVIEWS) THAT INVESTIGATED MORTALITY OF LARGE CONIFERS (20" DBH OR SO) AFTER SUMMER FIRES--THIS IS VERY IMPORTANT BECAUSE THERE ARE FAR HIGHER MORTALITY RATES FOR SPRING FIRES AND SMALL TREES, THUS THEY ARE NOT APPLICABLE TO THIS ISSUE.

b) What percentage of both ponderosas and white firs over 21" dbh do you expect will die if they have 80% crown scorch? Where is your analysis of the adverse impacts (e.g., on old forest species) of removing such trees that otherwise would not have died?

c) What level of certainty of mortality do you believe is sufficient to meet your requirement that no live trees over 21" dbh be removed? (e.g., 80%, 90%, 95%) Where is the hard scientific data that supports this level of mortality certainty for the trees over 21" dbh at 80% crown scorch? You state on DEIS p. 3-81 that you will only remove trees over 21" dbh if they are "very likely" to die (you also use the term "high degree of confidence"). PLEASE TRANSLATE THESE VAGUE TERMS INTO A PERCENTAGE. Again, please restrict your answer to data involving large trees after summer fires.

d) You state that trees over 21" dbh can be considered "dead" for salvage purposes if they have less than 20% "bright green" crown. What if such trees have 40% medium green crown? Will they be considered dead for salvage purposes? Who will determine whether the remaining crown is "bright" or not and based upon what criteria? This appears to be a totally arbitrary criteria, subject to gross error and abuse.

e) What scientific studies can you cite that support your ability to accurately determine "bright" green crown from "medium" green?

f) All ponderosa pines "slough-off" needles in summer and fall. This is natural and does not in any way indicate a lack of vigor. When this sloughing occurs, the remaining green crown does not appear "bright green". Given this, how do you intend to prevent healthy trees from being mistaken for low-vigor trees and subsequently cut down?

2) Your mortality criteria for trees over 21" dbh (i.e., trees can be considered to be dead with 80% crown scorch) is not supported by science, and is contradicted by the existing body of science. Thus, you are in violation of the requirement to retain all live trees over 21" dbh. Please consider and fully respond to the following scientific studies:

a) Stephens, Scott L. (UC Berkeley), and Mark A. Finney (U.S. Forest Service, Rocky Mtn. Res. Sta.), 2002, "Prescribed Fire Mortality of Sierra Nevada Mixed Conifer Tree Species: Effects of Crown Damage and Forest Floor Combustion," Forest Ecology and Management, Vol. 162, pp. 261-271, Fig. 1 (70% of ponderosas 20 inches in diameter survived 80% crown scorch/kill long-term), Fig. 3 (63% of white fir 20 inches in diameter survived 80% crown scorch/kill long-term). Also, a substantial percentage of the ponderosas survived 100% crown scorch. Id., Fig. 1. About three-

quarters of trees that did die faded to completely brown foliage within the first year, so it did not take long to determine whether a tree would die or not. Id., Table 5. It has now been 15 months since the Toolbox fire complex. Most of the trees that are going to die would have already died.

b) Ryan, Kevin C., and Elizabeth D. Reinhardt, 1998, "Predicting postfire mortality of seven western conifers", U.S. Forest Service, Intermountain Fire Sciences Lab, published in: Canadian Journal of Forest Research, Vol. 18, pp. 1291-1297. This study developed a standard model applicable to Western conifers. It found that for conifers with bark thickness of 4 centimeters (about one and a half inches), which corresponds roughly to trees 18-22 inches in diameter, 50% survived 80% crown scorch/kill. Id., Fig. 2. For somewhat larger conifers with bark thickness 5 cm (corresponding to trees 22-28" dbh), 55% survive 80% crown scorch/kill. Id.

c) Harrington, Michael, G., 1987, "Ponderosa Pine Mortality From Spring, Summer, and Fall Crown Scorching," Western Journal of Applied Forestry, Vol. 2, pp. 14-16. About 89% of ponderosas survived long-term with 67-89% crown scorch after a summer fire. Id., Table 3. The larger trees had a substantially higher survival rate than this. Id., p. 15. For ponderosas over 11 inches in diameter in a summer fire, 95% survived long-term (all categories of crown scorch combined). Id., Table 2.

d) Reinhardt & Ryan (1988), Figure 1, shows that for trees with crown scorch of 80% and bark thickness of 2 inches (which corresponds to a diameter of about 21 to 30 inches for most Western conifers), about 60% survive. Reinhardt & Ryan, "How to Estimate Tree Mortality Resulting from Underburning", Fire Management Notes 49(4): 30-36 (1988).

e) Another study recommended 90% crown scorch as a salvage logging guideline for ponderosa in order to minimize error (i.e., cutting down trees that would otherwise survive). Saveland and Neuenschwander, "A Signal Detection Framework to Evaluate Models of Tree Mortality Following Fire Damage", Forest Science, Vol. 36, p. 73 (1990).

3. Given that the science shows that the majority of the trees that will die from fire-related injuries (excluding those killed immediately by the fire) will die within the first year or so (and certainly by the end of the second fall after the fire), what scientific evidence do you have to show that the great majority, or even most, of the ponderosas and white firs over 21" dbh with 80% crown scorch will die IF THEY HAVE ALREADY SURVIVED TWO YEARS AFTER THE FIRE (WE ASSUME THAT LOGGING COULD NOT BEGIN UNTIL SUMMER OF 2004)?

4. The National Forest Management Act regulations (36 CFR 219.19) require you to gather and provide population trend data on all management indicator species. We could not find any references to such data in the DEIS with regard to the black-backed woodpecker. You cannot salvage log any stands with over 50% mortality (or at least those with over 75% mortality) until and unless this data is gathered and made available. Nor have you apparently gathered the essential "habitat proxy" data throughout the national forest in order to use it instead of actual population data.

5. The number one listed purpose and need of the project is to provide optimal snag conditions for cavity-nesting species. You are failing to do this with regard to the black-backed woodpecker.

6. The Summary (at p. S-6) states that you are required to "provide the amount of snags...required for 100 percent of potential population levels of primary cavity excavators". You are failing to do this with regard to the black-backed woodpecker. This is true because you plan to salvage log 14,441 acres of burned forest (most of which you state has high mortality levels--i.e., is habitat for black-backed woodpeckers), and would retain only 10 snags per acre. DEIS, p. 2-23, p. 2.17, Table 2.2. You would retain only 1,218 acres of severely burned forest unlogged. DEIS, p. 3-170. Based upon the following information, this would severely harm this species:

a) "More Information on 'Black-backed Woodpeckers'", U.S. Forest Service article (2000)(visit http://www.earthsky.com/2001/esmi010404.html for this article)(states that black-backed woodpeckers need severely burned forest habitat and "disappear" after even partial salvage logging).

b) Hutto, Richard L., "Composition of bird communities following stand-replacement fires in northern Rocky Mountains (U.S.A.) conifer forests," Conservation Biology, 9(5): 1041-1058 (see Table 3 in particular re: black-backed woodpecker--found that black-backed woodpeckers were extirpated after post-fire salvage logging in severely burned stands).

c) Saab, Victoria, and Jonathan Dudley, "Responses of cavity-nesting birds to stand-replacement fire and salvage logging in ponderosa pine/Douglas-fir forests of southwestern Idaho," RMRS-RP-11. Ogden, UT: US Forest Service, Rocky Mountain Research Station (1988) (found that black-backed woodpeckers needed unlogged severely burned forest with LARGER THAN AVERAGE SNAGS--33 per acre 9-20" dbh and 7 per acre over 20" dbh on average, with even larger and more abundant snags around nest stands).

d) Dixon, Rita D., and Victoria Saab, "Black-backed Woodpecker," The Birds of North America, No. 509, A. Poole and F. Gill, Editors (2000) (black-backed woodpeckers are vulnerable to local and regional extinction as a result of post-fire salvage logging in high mortality stands).

7. The habitat that you have deemed to be "optimal" for black-backed woodpeckers appears basically to be very young plantation stands with few if any larger trees. This is apparent from the description on page 3-156 and the photo on page 3-148. This is NOT optimal black-backed woodpecker habitat, as it contains far too few larger trees (see 6c above). Given your criteria of 100% of potential population levels, you cannot log any of the high mortality stands. You only propose a 19% tolerance level for black-backed woodpeckers, an MIS species. DEIS, p. 3-170. This is totally inconsistent with the stated purpose and need.

8. You state on p. 3-156 that the "8,642 acres of harvest within the greater than 50 percent mortality category would likely not provide nesting habitat for black-backed woodpeckers in both the short-term and long-term." Upon what scientific basis do you make this determination? Please provide the scientific hard data to support this claim, including citations to scientific studies (and descriptions of the findings of those studies). We do not believe that there is ANY scientific basis whatsoever for this statement. At the top of p. 3-155, you state that on these acres you would leave only 8 trees/acre 10-20" dbh and only 2 per acre over 20" dbh. This is totally inadequate for the black-backed woodpecker and will cause serious harm. See #6 above, including 6c. Specifically, Saab & Dudley (1998) found that black-backed woodpeckers preferred nesting habitat had approximately 60 snags per acre 9-20 inches in diameter, and 10 snags per acre over 20 inches in diameter. Saab & Dudley (1998), Fig. 4, Fig. 5.

9. You seem to be implying that severely burned mature or old growth forest is not suitable habitat for black-backed woodpeckers. We do not agree. Please respond, and provide the scientific evidentiary basis for your view.

10. You seem to be implying that severely burned forest that had low to moderate canopy cover pre-fire is not suitable black-backed woodpecker habitat. We do not agree. Please respond and provide the scientific evidentiary basis for your view.

11. You imply that retaining only 10 snags per acre in the logged areas (8 snags/acre 10-20" dbh and 2/acre over 20" dbh) is optimal for Lewis's woodpeckers. Yet none of the science agrees with you on this. Saab & Dudley (1998) found that Lewis's woodpeckers preferred nesting habitat had 25 snags/acre 9-20 inches in diameter and 6 snags/acre over 20 inches in diameter. Saab & Dudley (1998), Fig. 4, Fig. 5. Please respond, and provide the scientific evidentiary basis for your claim that Lewis's woodpeckers do best with only 2 large snags and 8 small snags per acre.

12. You identify snag retention for cavity-nesting birds the number one goal/purpose, and state that the goal is 100% of potential populations (p. S-6), but then adopt a snag retention criteria at a low-percent tolerance level for Lewis's woodpeckers. DEIS, p. 3-170, p. 3-173. How do you explain this discrepancy? You don't appear to be meeting the stated purpose and need for either black-backed woodpeckers or Lewis's woodpeckers. You claim that they may not require as many snags per acre in eastern Oregon. Id. Upon what scientific evidence is this based?

13. You state (DEIS, p. 1-15) that cutting and removing the trees (including large trees) that have less than 20% green crown will reduce the incidence of bark beetles. We disagree, and we are not aware of any published, peer-reviewed scientific studies which find that such logging reduces incidence of bark beetles. If you have scientific evidence to support your assertion, please provide it and describe it in detail, including full citations. You make this assertion again on p. 3-68, but again you provide no citations and no data.

14. You state (DEIS, p. 1-15) that bark beetle incidence has increased significantly on your forest in recent years. Please provide hard data to support this, or acknowledge that it has no basis in fact.

15. Bark beetles are attracted to stumps and slash. Yet the primary predators of bark beetles, black-backed woodpeckers, cannot survive in areas where snag retention is as low as you propose (see above; see also 6a above (a single black-backed woodpecker eats 13,500 bark beetle larvae each year). Thus, you are removing the habitat for the predators of bark beetles without proportionally reducing the habitat for bark beetles and wood-boring beetles themselves. You could actually INCREASE, not decrease, bark beetles populations through your proposed logging. Please analyze this potential impact.

16. Why do you need to take action to reduce bark beetle populations? Where is your scientific hard data that their populations are abnormally high for a post-fire environment?

17. You state (DEIS, p. 2-40) that in areas where post-logging fuel loads will exceed 20 tons per acre or so, you will conduct post-logging fuel treatments, including piling and burning at landings, in order to reduce fuel loads. WHEN WILL THIS OCCUR (I.E., HOW LONG AFTER LOGGING)?

18. Will slash clean-up be required of the timber contractors? If not, has funding been secured to complete these activities? Has slash clean-up funding even been applied for?

19. You cite no scientific evidence to support your claim that removal of large trees (over 21" dbh) is necessary to reduce severe fire potential in the future. Please provide the scientific hard data, including peer-reviewed, published studies, which show that removal of large trees is necessary in post-fire stands in order to prevent future severe fire. Please provide any studies which show that removal of large trees does in fact reduce future severe fire, or that large logs are a major contributor to severe fire behavior.

20. Your fire/fuels section on the no action impacts (DEIS, pp. 3-19 through 3-22) predicts that there will be 60-100 tons per acre of surface "fuels" per acre, but does NOT distinguish between fuels 0-3" in diameter, 3-10" diameter, and 10" and larger. This is totally unscientific. All of the fuel models are based upon the tonnage of material 0-3" in diameter (and some of them include material 3-8" in diameter). Yet nowhere do you include data on the amount of material of these two smallest size classes in each alternative pre- and post-logging. This is a major failure of analysis under NEPA.

21. The existing science does NOT support removal of large snags for fire risk-reduction purposes because such removal is unnecessary in does not reduce severe fire risk. A very recent Forest Service study determined that the curve describing the contribution to fire severity flattens out dramatically for logs over 8 inches in diameter. Brown et al, "Coarse Woody Debris: Managing Benefits and Fire Hazard in the Recovering Forest", U.S. Forest Service, RMRS-GTR-105, p. 8, Fig. 3 (July 2003). In other words, 20 tons per acre of small diameter material is vastly more flammable than 20 tons per acre of large logs. In fact, the contribution of large logs was deemed to be insignificant. Id., Fig. 3. The authors concluded that, "[h]igher loadings of [coarse woody debris] are acceptable where larger piece sizes predominate, for example in accumulated falldown of old growth trees." Id., p. 8. Jimerson & Jones (2002) found that where large logs and all branches (from an earlier blowdown) remained, most of the area burned severely, but where the large logs were removed and slash remained, the area burned even more severely. Thus, the presence of large logs was not a factor in the fire's severity, and their removal did nothing to reduce fire severity. Please respond to this information.

22. Please consider an alternative that would remove snags under 12" dbh, where fuel loading is a concern, and would pile and burn these stems at landings.

Sincerely,

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