UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
EUGENE DISTRICT OFFICE

DECISION RECORD

DOI-BLM-060-2015-0002-EA

John's Last Stand Timber Sale Decision Record

DECISION

Based on the analysis documented in the Lost Creek Environmental Assessment (DOI-BLM-060-2015-0002-EA), FONSI, and associated project record, it is my decision to implement Alternative 2 for John's Last Stand Timber Sale as described in the EA, including all applicable project design features (PDFs).

PLAN CONFORMANCE

This proposed action is in conformance with the Eugene District's 1995 Resource Management Plan (RMP) as amended and with court orders relating to the Survey and Manage mitigation measure of the Northwest Forest Plan. This project implements (is tiered to) the Final Environmental Impact Statements for the Eugene District Resource Management Plan (1995), as amended, as well as all documents contained in the Lost Creek EA project file. The Lost Creek Environmental Assessment (EA) is tiered to these documents as permitted by the National Environmental Policy Act (NEPA) (40 CFR 1502.20).

The project is consistent with the 2001 ROD and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, as incorporated into the Eugene District Resource Management Plan.

This project utilizes the December 2003 species list. This list incorporates species changes and removals made as a result of the 2001, 2002, and 2003 Annual Species Reviews (ASR) with the exception of the red tree vole. For the red tree vole, the Ninth Circuit Court of Appeals in KSWC et al. v. Boody et al., 468 F3d 549 (9th Cir. 2006) vacated the category change and removal of the red tree vole in the mesic zone, and returned the red tree vole to its status as existed in the 2001 ROD Standards and Guidelines, which makes the species Category C throughout its range.

All required surveys and management actions required under the Survey and Manage program were followed for the area proposed for regeneration harvest. The first notice for sale will appear in the newspaper on November 18, 2015.

RATIONALE FOR SELECTION

I have selected Alternative 2 because I believe it best fits the purpose and need for action as presented in the EA and provides the best cost-benefit ratio of timber harvesting costs (both short and long term) and impacts to natural resources. Treatments will provide and help to create a sustainable supply of timber in the Matrix. I find that it meets all applicable statutory and regulatory duties and management direction. In making this decision, I have considered comments we received and responded to over the course of the project, all analysis conducted by the Interdisciplinary Team, and documentation disclosed in the Finding of No Significant Impact.

Regeneration harvest will be designed to remove merchantable trees (greater than 8 inches diameter at breast height (DBH)). Sufficient trees will be retained from harvest to create an average of 3.4 snags and 240 linear feet of coarse woody debris (CWD) per acre, to be created within 5 years post-harvest. An

average of an additional 6 to 8 green trees per acre will be retained. Retention trees will generally focus on the larger and more vigorous trees. Additionally, hardwoods will be retained where possible.

No silvicultural treatments will occur in the Riparian Reserves. No new road construction will occur.

I did not select Alternatives 1 or 4 because they did not meet the Purpose and Need as outlined in the EA (pg. 2).

I did not select Alternative 3 because Alternative 2 better provides for the sustainable harvest of timber. Although Alternative 2 would have higher resource impacts, those impacts are minimized through project design features and I believe they are within acceptable levels. (See response to comments, Appendix A.)

CONSULTATION AND COORDINATION

The BLM completed Section 7 consultation under the Endangered Species Act (ESA) with the U.S. Fish and Wildlife Service for northern spotted owls. ESA consultation considers effects to general habitat due to habitat modification, and effects to site occupation and reproduction due to habitat modification and nesting behavior due to noise disturbance/disruption. Collectively these considerations result in an overall effects determination of project actions. Consultation was conducted under the following batched Province BA: Biological Opinion on the Effects of Habitat Modification Activities within the Willamette Province, FY 2016-2017, proposed by the Eugene District, Bureau of Land Management; Salem District, Bureau of Land Management; Mt. Hood National Forest; Willamette National Forest; and the Columbia River Gorge National Scenic Area on the Northern Spotted Owl and its' Designated Critical Habitat (FWS Reference Number 01 EOFW00-20 1 5-F-03 19).

It was determined that Alternative 2 would result in a "*likely to adversely affect*" determination for the John's Last Stand Timber Sale.

IMPLEMENTATION

Implementation for this Decision Record is anticipated to begin in early 2016.

Public Involvement

Scoping

A public scoping letter was mailed to landowners near the project area as well as individuals and organizations who had previously requested to be informed of District activities on December 11, 2014. It was also posted in the Eugene District's Planning Website on the same day. Scoping comments were received from the Oregon Department of Fish and Wildlife (ODFW), four organizations, and five individuals. The BLM interdisciplinary team of resource specialists reviewed the public input received and identified relevant issues to be addressed during development of the alternatives and environmental analysis.

Public Comment

The Lost Creek EA was posted on Eugene District Planning website on September 23, 2015. An e-mail message was sent to all agencies, organizations, and individuals who had expressed interest in receiving either notification of all Eugene BLM projects or the Lost Creek project specifically. The BLM received eight comment letters during the 30 day public comment period for the Lost Creek EA. Written comments received in response to the Lost Creek EA were reviewed by the interdisciplinary team and responsible official and substantive comments are addressed in Appendix A of this decision.

ADMINISTRATIVE REMEDIES

The decision described in this document is a forest management decision and is subject to protest by the public. In accordance with Forest Management Regulations at 43 CFR Subpart 5003 Administrative Remedies, protests of this decision may be filed with the authorized officer (William O'Sullivan) within 15 days of the first publication date of the notice of decision and timber sale advertisement in *The Register Guard* Eugene, Oregon on November 18, 2015.

43 CFR § 5003.3 subsection (b) states: "Protests shall be filed with the authorized officer and shall contain a written statement of reasons for protesting the decision." This precludes the acceptance of electronic mail (email) or facsimile (fax) protests. Only written and signed hard copies of protests that are delivered to the Eugene District office will be accepted. The protest must clearly and concisely state which portion or element of the decision is being protested and the reasons why the decision is believed to be in error.

43 CFR § 5003.3 subsection (c) states: "Protests received more than 15 days after the publication of the notice of decision or the notice of sale are not timely filed and shall not be considered." Upon timely filing of a protest, the authorized officer shall reconsider the project decision to be implemented in light of the statement of reasons for the protest and other pertinent information available to him. The authorized officer shall, at the conclusion of the review, serve the protest decision in writing to the protesting party(ies). Upon denial of a protest, the authorized officer may proceed with the implementation of the decision as permitted by regulations at 5003.3(f).

If no protest is received by the close of business (4:30P.M.; Pacific Standard Time) within 15 days after first publication of the decision notice on November 18, 2015, this decision will become final. For further information, contact William O'Sullivan, Field Manager, Upper Willamette Field Office, Eugene District, Bureau of Land Management, 3106 Pierce Parkway Suite E; Eugene, OR 97477; 541-683-6287.

Signature of the Responsible Official:

/s/ William O'Sullivan
William O'Sullivan

Upper Willamette Resource Area Manager

November 17, 2015
Date:

Appendix A

Lost Creek Environmental Assessment
Response to Comments

The BLM received eight comment letters during the 30-day public comment period for the Lost Creek EA. Written comments received in response to the Lost Creek EA were reviewed by the interdisciplinary team and responsible official and substantive comments are addressed below. The BLM elected to respond to some non-substantive comments where it would improve the public's understanding of the project or planning process. In some cases the comments have been quoted directly from commenter's letters and in some cases they have been paraphrased. Comments were paraphrased for brevity, clarity, and/or where multiple commenters raised similar subjects.

Substantive Comments are those that:

- Provide new information pertaining to the Proposed Action or an alternative;
- Identify a new relevant issue or expand on an existing issue;
- Identify a different way (alternative) to meet the purpose and need;
- Identify a specific flaw in the analysis;
- Ask a specific relevant question that can be meaningfully answered or referenced;
- Identify an additional source of credible research, which if utilized, could result in different effects.

Non-substantive comments are those that:

- Primarily focus on personal values or opinions;
- Simply provide or identify a preference for an alternative considered;
- Restate existing management direction, laws, or policies that were utilized in the design and analysis of the project (or provide a personal interpretation of such);
- Provide comment that is considered outside of the scope of the analysis (not consistent or in compliance with current laws and policies, is not relevant to the specific project proposal, or is outside of the Responsible Officials decision space);
- Lack sufficient specificity to support a change in the analysis or permit a meaningful response, or are composed of general or vague statements not supported by real data or research.

<u>Alternatives/Purpose and Need</u>

1. ***The RMP objectives, land use allocations, and use of culmination of mean annual increment (CMAI) are outdated and the BLM should not consider them while developing the Purpose and Need.***

Response:

The BLM is mandated to follow the 1995 RMP. The decisions regarding goals, objectives, land use allocations, and use of CMAI was made in the Record of Decision for the Eugene RMP as part of the land use planning process. Changing the decisions established in the Eugene RMP is above and beyond the scope of site-specific project planning. The Lost Creek project is implementing the objectives identified for the project area land use allocations (EA, p. 1-3).

2. The BLM should consider a no-roads alternative.

Response:

The BLM has included an adequate range of alternatives in the EA. The BLM is required to include a discussion of a range of reasonable alternatives to the proposed action which are technically and economically feasible and which meet the purpose and need.

The BLM considered a No New Roads alternative, but did not analyze it in detail after evaluating the potential for helicopter harvest, economic costs of helicopter harvest, need for treatment in areas which could not be reached by existing or temporary roads, and potential for decommissioning of temporary roads. (EA p. 6-7) The BLM analyzed the effects of not constructing new permanent roads where it was economically and technically feasible to either harvest with helicopter or utilize temporary roads under Alternative 4.

3. The BLM should not consider creation of high-quality early seral as a reason for regeneration harvest.

Response:

The BLM did not include creation of high-quality early seral habitat in the purpose and need for this project. The BLM evaluated the effects of regeneration harvest on stand age distribution and the impacts to sustained yield management (EA, Issue 4).

4. Commenters suggested that no logging provides a greater economic benefit to communities than logging.

This issue is outside the scope of analysis in this project. The allocation of lands to timber production versus other uses occurs during the land use planning process. The appropriate scale and timing for conducting a cost benefit analysis for timber harvest versus other allocation of resources is during the land use planning process. A decision as to whether or not to allocate the Lost Creek project lands to be managed for the purpose of timber production was made in the Record of Decision for Eugene RMP. The Lost Creek Project is implementing the objectives identified for those established land use allocations.

5. BLM should manage the lands for other uses than timber.

Response:

The appropriate time for conducting a cost benefit analysis for timber production versus other management priorities is during the land use allocation planning process. The land use allocation designated for the lands in the Lost Creek project area are Matrix and Riparian Reserves. A decision as to the commitment of resources and the goals and objectives of the project area was made in the Record of Decision for the Eugene RMP. The Lost Creek project is implementing the objectives identified for the land use allocations for the project area (EA, p. 1-3). This issue raised is above and beyond the scope of analysis during site-specific project planning.

<u>Special Status, Threatened, and Endangered Species</u>

6. Much of the discussion in the EA seems to make the assumption that any forest management activity that harvests and removes standing trees will have negative short-term affects to the northern spotted owl (NSO), including such treatments in dispersal habitat. Page 34 of the EA cites several pieces of literature from 1981 to 2013 to support the notion that despite meeting or exceeding dispersal habitat elements, owls will use these stands less in the short term. We

urge you to consider a recent document published earlier this year by Larry Irwin that suggests that partial harvest forestry, primarily commercial thinning, has the potential to improve use, including foraging, for spotted owls (Irwin et al. 2015; Forest Ecosystem restoration; Initial response of spotted owls to partial harvesting).

Response:

The BLM is aware of this study, however only two stands in the same forest type as the Lost Creek project were treated, with the remainder of treatments occurring in different forest types to the south. In the two relevant treatment units, data was limited and one unit showed an increase in use while the other showed a decrease in use. The authors provided some speculation before acknowledging that the results have limited utility:

"There [the Springfield study area, ed.], only two owl home ranges received silvicultural treatments, and one heavily-used harvested stand (Fig. 1B) was a lightly-thinned unit that encompassed an unharvested riparian zone that may have provided a supply of bushy-tailed woodrats (*N. cinerea*) (Carey et al., 1992). Thinned stands in this study area also may have provided an increased supply of deer mice (*P. maniculatus*) (Suzuki and Hayes, 2003), or the harvesting may have resulted in increased vulnerability of northern flying squirrels and red tree voles. Without complementary information on the relative abundance and availability of prey populations, especially at the landscape level, we cannot generalize widely from the greater probability of use by owls of some, but not all, harvested stands at Springfield."

7. ***We request that the BLM specifically note the language in the literature cited that supports the assumptions described in the EA. Two documents (Forsman et al. 1984 & Meiman et al. 2003) in particular are cited to conclude that thinning reduces & precludes the use of thinned stands in the short-term. Can you provide the excerpts from these two documents that support this assumption?***

Response:

Forsman et al. (1984):

p. 16-17: "Of the 9 sites that were selectively logged after owls were located, 7 were subjected to relatively light overstory removal, and 2 were heavily thinned. At 6 of the 7 sites subjected to light overstory removal, timber sales were laid out so that a small patch (2.6-10 ha) of unlogged old-growth was left around the nest tree of the resident owls. On the latter sites, 3 pairs subsequently used their old nest trees in 1 or more years following harvest. The other 3 pairs remained in the same general areas after harvest but we were unable to document nesting. The nest of the seventh pair was not located prior to harvest, but we suspected it was located in the area harvested (fledglings were observed in the harvest unit prior to harvest). In this case the owls responded to harvest by moving to a new nest tree in an unharvested old-growth stand 1.2 km from the suspected location of the old nest. The new nest was subsequently used for 2 years before the owls disappeared from the area completely.

On the 2 sites where overstory and understory trees were heavily thinned, the spacing between trees in the owl nest areas was increased to 10-20 m as a result of harvest. Canopy closure was reduced to <50%. One of these pairs subsequently disappeared. The other pair shifted their activities to an unlogged old-growth stand bordering the harvested area; a new nest was located in the unlogged area 4 years after harvest of the original nest area."

Meiman et al. (2003):

p. 1261: "A particularly important question is whether the effects of the thinning on owl behavior were confined to the time period during road building and harvest operations or continued after harvest operations ceased. Because we recorded only 8 locations in the thinned area once harvest activity

began, it was difficult to examine owl use of the thinned area during harvest activity as compared to postharvest. Nevertheless, proportional use of the stand was significantly less both during and after the harvest operation as compared to the preharvest period. Locations collected during the winter, when harvest occurred, were less concentrated and spread over a larger area than during any of the preharvest years. However, this pattern of more dispersed movements continued through the following winter after harvest was complete, thereby indicating that the habitat alterations also contributed to the reduced use of the thinned stand. Reasons for this avoidance and expansion of home range are not clear, but may include changes in prey abundance or availability, less suitable microclimate for owl roosting, or higher vulnerability to predators within the thinned area (Carey et al. 1990)."

8. ***It appears based on the discussion on page 34 of the EA that the BLM is considering a multitude of habitat elements when making an effects determination to the NSO, one of these being canopy closure. While canopy closure is surely an important habitat element to consider, we urge the BLM to avoid placing a firm percentage threshold on this element in your EA's. A preferable method would be to focus on overall habitat functionality rather than identifying a threshold that is very difficult to measure accurately. The way your EA is written you could be violating your Endangered Species Act requirements if you thinned one of your stands down to 49% canopy closure.***

Response:

The threshold used in our Endangered Species Act (ESA) consultation documents is 40% canopy cover. Since the Lost Creek thinning units all are projected to have 50% or greater canopy cover after harvest, there already is a built-in buffer. We use canopy cover because it is quantifiable and preferred by the US Fish and Wildlife Service (FWS). As an example of its utility, a recent effort was successfully completed on the Medford District BLM to ensure ESA compliance in harvest units by field measurement of canopy cover.

9. ***We are confused regarding the NSO habitat assessments made concerning the increased "untreated riparian buffers" associated with Alternatives 3 & 4. The EA states on both pages 42 & 45 that wider untreated riparian buffers "would result in substantially improved short and long-term spotted owl habitat conditions." Page 44 of the EA identifies a "long-term increase in NSO habitat quality in proposed thinning areas." How can the BLM support a statement that claims the deferral of thinning acreage would result in improved long-term habitat conditions for the NSO, while stating the contrary in the same document? We would surmise, based on the overwhelming scientific consensus that thinning dense, uniform conifer stands has long-term beneficial effects to NSO habitat, that a reduction in acreage of these types of stands being thinned would have adverse long-term affects to the NSO.***

Response:

This statement is based on the spatial arrangement of the affected areas. Because the Riparian Reserves system is a continuous branching network across the landscape, it facilitates movement better than the same amount of disjunct acres would. Increases in the riparian no-harvest buffer width would capitalize on this spatial arrangement. Additionally, because the reduction in thinning would be small (a maximum of 10% less overall thinning in Alternative 4 than in Alternative 2), widened riparian buffers would serve to provide habitat heterogeneity as "skips" in the treated areas while having little overall effect on habitat development at the project scale.

10. The BLM should not conduct analysis of effects to northern spotted owls at the province-scale.

Response:

The Lost Creek EA appropriately analyzed project effects to northern spotted owls at several relevant scales: individual northern spotted owl sites, the Lost Creek watershed, and the Willamette Planning Province (EA p. 24-49).

11. The BLM issued the EA prior to receiving a final Biological Opinion from FWS.

Response:

As anticipated in the EA, the BLM received a Biological Opinion from the FWS (FWS reference: 01EOFW00-2015-F-0319) on October 1, 2015 confirming the effects calls and analysis described in the Lost Creek EA.

12. The BLM should not emphasize timber production in Matrix lands due to increased competition between barred owls and northern spotted owls.

Response:

The Lost Creek EA considered effects to northern spotted owl habitat and nest sites, including concluding that the project would not increase competition from barred owls (EA p. 35). The US Fish and Wildlife Service determined that the Lost Creek project would not cause "take" or jeopardize the continued existence of northern spotted owls during Section 7 consultation (Biological Opinion on the Effects of Habitat Modification Activities within the Willamette Province, FY 2016-2017, proposed by the Eugene District, Bureau of Land Management; Salem District, Bureau of Land Management; Mt. Hood National Forest; Willamette National Forest; and the Columbia River Gorge National Scenic Area on the Northern Spotted Owl and its' Designated Critical Habitat [FWS Reference Number 01EOFW00-2015-F-0319]). The analysis in the Biological Opinion considered the most current available information on the status of the northern spotted owl including impacts from barred owl interactions and the literature provided by the commenter. Notwithstanding these effects determinations, the decision as to whether or not to allocate the Lost Creek project area to the purpose of timber production was made in the Record of Decision for the Eugene RMP as part of the land use planning process. Changing the land use allocations established in the Eugene RMP is above and beyond the scope of analysis during site-specific project planning. The Lost Creek project is implementing the objectives identified for land use allocations for the project area, as determined by the Record of Decision for the Eugene RMP (EA, p. 1-3).

13. The BLM should not use snag and CWD numbers called for under the RMP.

Response:

The Lost Creek EA is a project-level analysis for implementation of the decisions made by the Eugene RMP during the land use planning process. Changing the objectives and management direction for land use allocations established in the Eugene RMP is above and beyond the scope of analysis during site-specific project planning. The Lost Creek project is implementing the objectives identified for land use allocations for the project area, as determined by the Record of Decision for the Eugene RMP (EA, p. 1-3). The BLM has reviewed the literature provided by the commenters and found it did not change the analysis of impacts. The EA acknowledged that harvest activities would leave a deficit of snags and CWD as compared to the no action alternative (EA, p. 25, p. 34, p. 42).

14. We would like the BLM to expand on its rationale for conducting red tree vole (RTV) surveys in all three regeneration harvest units, particularly the unit in the Anthony Access sale which is identified as dispersal habitat in Table 8 in the EA. We visited all three of these units and feel

that at the least, the unit in the Anthony Access sale does not warrant surveys per the survey protocol you cited in the EA. The protocol identifies two general habitat condition classes that would warrant surveys. The first discusses mature and old-growth stand characteristics and the second discusses conifer-dominated forests with a minimum canopy closure level and at least two superdominant conifer trees per acre. In our opinion the unit in the Anthony Access sale contains neither of these two condition classes. During our visits to the stand we saw no trace of any superdominant trees, nor did we see any stand characteristics that would warrant the classification of the stand to be anything beyond "mid-seral". Due to the costly and time consuming nature of conducting surveys we would like to urge the BLM to take a hard look at whether or not such surveys are truly necessary.

Response: The John's Last Stand and Gosage Incline regeneration harvest units met the survey protocol trigger based on stand Quadratic Mean Diameter (QMD) and the presence of superdominant trees.

The commenter is correct in that the unit proposed for regeneration harvest in Anthony Access met the threshold for QMD but did not have sufficient superdominant trees to require surveys. As the area was not persistence-quality habitat for RTVs, the BLM would still have had the option of regeneration harvesting the stand if RTVs were discovered in the stand. No potential RTV nests were found however. BLM staff conducted the ground transect surveys and no climbing was done in the Anthony Access unit. Therefore the expense of surveying this unit was minimal. The BLM felt that the minimal expense of conducting transect surveys in this particular unit, which has easy access and terrain, was a worthwhile investment of resources as it provided additional confirmation that our understanding that RTVs are unlikely to utilize stands lacking superdominant trees was correct, provided us with additional information regarding project effects for our impacts analysis, and reduced the potential for new information such as the presence of nests needing to be considered late in project development.

15. The EA does not provide maps of where the RTV nests and RTV management areas are located. There is more than one way to buffer RTV nests, so BLM should inform the public how they designed the buffers.

Response:

The BLM does not generally disclose nest site locations in public documents in order to protect the species from disturbance and harassment; information on exact locations of nests is maintained in the project record. The BLM established Habitat Areas to protect RTV nests according to the prescriptive direction found in the Management Recommendations for the Red Tree Vole, v2.0 (EA, p. 49).

16. The BLM should consider the effects to connectivity for the Pacific fisher since the Fish and Wildlife Service proposed it for listing under the Endangered Species Act.

Response:

The U.S. Fish and Wildlife Service issued a proposal to list the West Coast distinct population segment (DPS) of the fisher as a threatened species under the Endangered Species Act on October 7, 2014. This project is outside of the Northern California/Southern Oregon area (see Federal Register Notice) and unoccupied by the fisher. As there was no potential for any adverse effects to the species, analysis of impacts in the EA would not lead to a more reasoned decision between alternatives.

17. A ½ mile distance between timber harvest activities and critical habitat for the Upper Willamette chinook is insufficient and requires an EIS.

Response:

As stated in the Fisheries Specialist Report "Most culverts are generally high up in the watershed and well above fish habitat. It is expected that each stream crossing culvert replacement or installation (based on

amount of bare soil and depth of the fill area) would generate approximately 0.5 to 1.0 yards of material that would move downstream. Approximately 20 to 38 stream crossings could be replaced under this alternative [Alternative 2, ed.]. Therefore, an estimated range of 10 to 38 yards of fine material could be added to the stream network. Implementation of project design features and on-site design of the crossing sites would minimize (erosion control, etc.) potential impacts to streams and fish bearing habitat. All culverts to be placed would increase stream turbidities locally during construction; however this increase in turbidity is not expected to move downstream more than 500 feet and would only be a short term increase in turbidity. Brake et al. (1997) found that on established logging roads within the Oregon Coast Range, the maximum observed distance sediment traveled below a ditch relief culvert with vegetation filtering or a stream crossing culvert with stream material present (LWD, boulders, debris, etc.) was typically not more than 6.21 meters (20.3 feet). Long term, stream crossings replaced under this alternative should reduce the amount of material that is added to the streams each year by reducing ditch line inputs and improving road drainage on older roads". (Fisheries Specialist Report, p. 16-17)

"Only immeasurable effects at the site scale are predicted to occur from Alternative 2, therefore, these effects at the site scale would have no effect further downstream on Chinook salmon or their critical habitat." (Fisheries Specialist Report, p. 22-23)

"Only immeasurable effects at the site scale are predicted to occur from the proposed action, therefore, these effects at the site scale would have no effect further downstream on Chinook salmon or their critical habitat. Due to haul routes being disconnected (road drainage not directly connected to local streams) from critical habitat this project would have No Effect on Upper Willamette River spring Chinook salmon or their critical habitat." (No Effect Determination for Upper Willamette River Spring Chinook Salmon, p. 1)
"These Timber Sales have no project elements with mechanisms to directly or indirectly affect stream flow, sediment or any other component of critical habitat for UWR spring Chinook salmon." (No Effect Determination for Upper Willamette River Spring Chinook Salmon, p. 2)

Because analysis appropriately concluded that there would be no effects to Upper Willamette Chinook salmon or their critical habitat, inclusion of the discussion in the EA would not lead to a more reasoned decision between alternatives. An EA serves to evaluate whether there is potential for significant impacts and an EIS is required; as no impacts are anticipated an EIS is not required.

18. The BLM did not consider the effects to bull trout in the EA.

Response:

The BLM did not consider bull trout in the EA because there would be no effects from the project on bull trout or their habitat. Bull trout critical habitat is approximately 8 miles downstream from the project area in the main stem Middle Fork Willamette River. Bull trout require extremely cold-water habitat that does not occur in Lost Creek watershed. Survey crews have surveyed the area and found no bull trout. The Lost Creek watershed is not capable of providing habitat conditions suitable for bull trout and was unlikely to have ever possessed cold enough water temperatures to maintain a population. Bull trout and their range have been thoroughly studied, surveyed, and documented over the past 20 years; it is now common knowledge that tributaries to the Willamette River such as Lost Creek do not provide the habitat needed by bull trout.

Because analysis appropriately concluded that there would be no effects to bull trout, inclusion of the discussion in the EA would not lead to a more reasoned decision between alternatives

Harvest in Riparian Reserves

19. We would like to encourage the Eugene BLM to consider more aggressive silvicultural treatments where appropriate. The implementation of a 75-foot no cut buffer seems excessive given the benefits of thinning to large wood creation in close proximity to stream channels, and the current literature that found that sediment delivery is unlikely when potential erosion features (e.g. skid trails and yarding corridors) are more than 33 feet from stream channels (Rashin et al. 2006; Effectiveness of timber harvest practices for controlling sediment related water quality impacts.).

Response:

BLM considers a multitude of factors when determining appropriate treatment and no-harvest areas in Riparian Reserves. These include many factors besides sedimentation including Aquatic Conservation Strategy (ACS) objectives, stand structure, connectivity for wildlife species including northern spotted owls and riparian-dependent terrestrial species, soil sensitivities, logging feasibility, and other resources.

20. The BLM should update the Watershed Analysis prior to treating in Riparian Reserves.

Response:

The BLM is not required to update the Watershed Analysis for this project. Watershed Analyses are an analytic tool used to aid in the NEPA decision-making process. Standards & Guidelines for Management of Habitat for Late-Successional and Old-growth Forest Related Species Within the Range of the Northern Spotted Owl, Attachment A to the ROD, p. E-20, April 13, 1994. The Watershed Analysis is an iterative process built on site-specific analyses related to management needs, not on studies performed for their own sake. The Watershed Analysis is thus a tool, not an end in and of itself.

As stated in the ACS Report "In developing the proposed project, the 1997 Lost Creek Watershed Analysis was used to evaluate existing conditions, establish desired future conditions, and assist in the formulation of appropriate alternatives.

The Lost Creek Watershed Analysis is available online at http://www.blm.gov/or/districts/eugene/plans/files/lostcreek.pdf. Current conditions for hydrology and water quality (pg. 43), soils (pg. 51), vegetation (pg. 62), fisheries (pg. 93) wildlife (pg. 75) are described in detail in the Lost Creek Watershed Analysis. Management actions in the last 18 years have not changed the overall existing conditions and trends of the watershed and therefore the analysis is still representative of the watershed. Within the last 18 years, various management actions have occurred (Riparian Reserve thinning, road renovation, clear-cut harvest on private land, etc.), however this has not shifted the age class distribution or its structure from the Analysis conducted in 1997."

21. The BLM should analyze the effects on watershed function at the watershed scale.

Response:

The ACS Report for the project analyzed the Aquatic Conservation Strategy Objectives (watershed function) for the entire project, which analyzed effects at the site and watershed scale in both the short and long term. Where the degree and type of effects varied by alternative and allow for a more informed and reasoned choice between alternatives, those effects were analyzed in Issue 3 of the EA at both the site and watershed scale.

22. The BLM should weigh the trade-offs of logging in Riparian Reserves in both the short and long term.

Response:

The BLM analyzed the trade-offs of treating within the Riparian Reserves. The effects analysis section described on p. 58-64 includes topics such as shade, dead wood, and vegetation diversity and complexity. The rationale and scientific underpinning for the creation of understory development is discussed throughout the effects analysis on p. 61-64. Issue 3 of the EA describes how the stands will develop over time through natural processes versus active management. Pollock and Beechie 2014 describe the trade-offs of thinning to enhance biodiversity. The trade-offs were discussed in the EA (p. 63).

The commenters did not provide any information on large wood recruitment which the BLM had not already considered. "Due to minimum no harvest buffers of 75 feet (25' study reaches addressed below), very little LWD potential would be lost from thinning from below. Johnston et al (2011) estimated that 90% of the 90th-percentile source distances were within 18 m (59 feet) of the channel, indicating that a buffer width of 18 m would maintain 90% of expected LWD inputs 90% of the time for streams. The thinned areas would have a small amount of timber blow down or natural mortality from thinning, and the no harvest buffer would continue to supply approximately 90-95 % of all LWD to area streams with smaller suppressed trees. The small reaches of the study site (approximately 600' long total) that are thinned would lose the smaller understory trees that would be removed as potential snags, coarse woody debris and large woody debris (wood that reaches streams). This loss in smaller suppressed trees (~2-3 acres) would not affect the overall amount of LWD in stream channels in the watershed, but would affect the amount of LWD for the streams adjacent to these study reaches and represents a small loss in small diameter LWD for the adjacent streams. Regeneration harvest would employ no harvest buffers of 200-400' (full Riparian Reserve no harvest buffers) and would not affect large woody debris delivery to streams." Fisheries Specialist Report. As the impacts to large wood in streams would not lead to a more reasoned decision, the details of analysis were not included in the EA.

23. Thinning riparian reserves for "diversity and complexity" is not supported as these features will develop over time through natural processes.

Response:

A commenter suggested the use of McIntosh et al. (2009), which analyzed stands from the Forest Inventory Assessment (FIA), for analyzing the impacts of thinning on diversity and complexity. This paper's analysis is not particularly applicable to the treatments being proposed in the Lost Creek EA, and it has important limitations to recognize. The FIA design provides an unbiased representative of nonfederal forests in western Oregon. However, the plots were not part of an experiment designed to control for variation or to test the effects of multiple factors. As a result, the number of plots in various age classes and forest types differed, and site attributes including species composition, site productivity, and disturbance history likely differed among plots within a forest type. The lack of balance in plot numbers has the potential to confound statistical comparisons of trends among groups, so statistical results are primarily descriptive and do not imply cause and effect. "Heavy" thinning treatments in their paper resulted in canopy cover of approximately 62 percent, and the "light" treatments had a canopy cover similar to the un-thinned stands of approximately 78 percent. In general, the proposed thinning treatments in the Lost Creek EA would result in much lower canopy cover (closer to 50 percent), which is expected to promote diversity in the understory as described in the studies utilized by BLM in the Lost Creek EA.

The commenter also suggested the BLM consider the results in Anderson (2007), which showed that their "light" thinning produced negligible responses in the understory. They attribute this to the low intensity of the thinning. The post-harvest canopy cover in the light thin was approximately 62% and only 22% of the basal area was removed. The prescriptions in the Lost Creek EA would thin to approximately 50% canopy cover and typically remove approximately 30% of the basal area, and therefore would not have been considered a light thin under Anderson. On pages 86 and 87 of this study it states: "However it is important to note that the thinning treatments imposed in this study are of relatively low intensity in terms of both the proportion of basal area removed and the size of gaps created in the group selection treatment. They also state on page 87 that "Recent studies by Maas-Hebner et al. (2005) and Chan et al. (2006) have demonstrated in thinned stands of the highly productive Coast Range forests of Oregon that underplanted Douglas-fir and western hemlock will have high rates of survival through eight years following thinning and planting across a broad range of residual stand densities".

The EA (p. 58) desribes the effects of the No Action alternative (natural processes) on understory diversity and complexity:

"In the short term, shrub density and cover would be expected to remain stable (Chan et al. 2006). Shading would continue to suppress or eliminate any light-dependent understory plants, thereby reducing available food for herbivores. Overstocked stands would continue to grow, but at slower rates as trees compete with each other for growing space. Canopy Cover and Relative Density would increase and the crowns of individual trees would continue to recede (Chan et al. 2006) resulting in increased suppression mortality and decreasing diameter growth as trees compete for water, nutrients, and sunlight (Oliver and Larson, 1990).

Due to the lack of sunlight reaching the forest floor, there would be little to no complex understory development and species diversity. Hardwoods would decline within the stands through suppression mortality. Natural pruning of shaded branches would lower the live crown ratios of the overstory trees and foliage would become concentrated high on the boles (Franklin et al. 2002). As the canopy cover increases, sunlight would be more restricted from the forest floor and thus understory growth and species diversity would decline."

24. Commenters assert that vegetation diversity and complexity are not appropriate indicators for achievement of ACS objectives and reference preliminary assessments and tables utilized by other agencies and offices to support their assertion.

Response:

ACS Objective 1 states "Maintain and restore the distribution, **diversity, and complexity** of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are adapted." [emphasis added]

ACS Objective 8 states "Maintain and restore the **species composition and structural diversity of plant communities in riparian zones and wetlands** to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration, and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability." [emphasis added]

The ACS objectives clearly call for vegetation diversity, complexity, and stand structure as not only indicators of general conditions but of goals in of themselves. Each agency and project may display their analysis and the consideration of ACS objectives in individual manners as suited to that project. Issue 3 in the Lost Creek EA clearly considers the impacts to ACS objectives related to diversity and complexity. The effects of both the no action and all action alternatives were fully analyzed in the ACS Report for the project.

25. The effects of thinning on crown development are not very significant.

Response:

The BLM appropriately considered the effects of thinning on crown development in the EA (p. 58-64) and in the Silvicultural Specialist Report (project file).

Commenters recommended BLM review the PowerPoint titled Density Management and Microclimate effects in W. Oregon by Sam Chan. The BLM reviewed the full PowerPoint in addition to the excerpt provided in the comment letter. The BLM found that the PowerPoint did not provide any information contradicting the analysis conducted for the Lost Creek EA. The BLM agrees with the general observations of the full PowerPoint that thinning does maintain and promote live crown size and the management implications stating that thinning in dense stands may improve structural diversity and old growth conditions.

See response to Comment 23 for additional information on the effects of thinning.

26. Stimulating the development of a diverse understory is often used as a justification for thinning, but this may not be justified in stands older than about 40 years.

Response:

The effect of thinning in stands greater than 40 years of age has been studied in numerous projects. As discussed in the response to Comment 23, the BLM has reviewed the studies recommended by the commenters and found them of limited value for analysis of effects in the Lost Creek EA. The BLM also considered the following studies:

Harrington et al. (2004) describe results from the Habitat Development Study in Washington, which treated stands 35-62 years old. They found that understory vegetation increased in coverage in almost all treatments and sub treatments.

Ares et al. (2009) describe results from the Density Management Study in Oregon. They found that understory vegetation richness increased 6 years after imposing 3 different thinning treatments in 40-60 year old stands, with increasing stand complexity from the recruitment of early seral and forest herbs, and both low and tall shrubs. They also found even greater species richness when prescriptions included gaps and leave islands as part of a variable thinning treatment. Increased overstory variability encouraged development of multiple layers of understory vegetation. Trees retained per acre ranged from 121 in the light thin to 40 in the heaviest thin.

Davis and Puettman (2009) analyzed data from the Young Stand Thinning and Diversity Study on the Willamette National Forest. They found that vegetation structure and composition differed between thinned and un-thinned stands, but varied little among thinning treatments. Thinning resulted in initial declines of bryophytes, tall shrubs, and low shrubs, but they recovered within 5 years. Herbs displayed little initial response, but a release of early-seral species was evident in the thinned stands by 5-7 years post treatment. Later in the publication they state that all types of thinning significantly altered the understory vegetation of young, managed forests relative to the un-thinned forest by influencing canopy openness and ground disturbance.

Shatford et al. (2006) studied the potential for stand density management treatments to increase growth rates of advanced regeneration in the understory of 50- to 70-year-old forests. They found that repeated density management treatments in these Douglas fir forests can accelerate growth of understory saplings, resulting in the development of two or more canopy layers over time; however, repeated and/or heavy thinning will likely be required for Douglas-fir sapling growth.

Bailey and Tappeiner (1997) studied the composition and structure of the understory in thinned and unthinned Douglas fir / western hemlock stands on 32 sites in western Oregon. The ages of the stands ranged from 40-100 years old. They found that in the thinned stands, the density of small trees was significantly greater than the unthinned stands, but not significantly different from that of old-growth. The live crown ratio of these trees in thinned stands was greater than the unthinned and old-growth stands.

Carbon Storage, Greenhouse Gasses, and Climate Change

27. The BLM should consider whether the project is consistent with Oregon State goals of reducing greenhouse gas emissions and the Presidential Climate Action Plan

Response:

The appropriate time for considering the best commitment of resources, goals, and objectives for management of lands is determined during the land use planning process. The land use allocation designated for the lands in the Lost Creek area are Matrix and Riparian Reserves. A decision as to whether or not to allocate the Lost Creek project area to the purpose of timber production has already been made. This issue is above and beyond the scope of analysis during site-specific project planning. The Lost Creek project is implementing the objectives identified for the land allocations determined by the Eugene RMP (EA, p. 1-3).

28. The carbon-climate analysis should both include near-term effects and extend out beyond 50 years because CO2 has a long residence in the atmosphere.

Response:

The 50 year analysis is appropriate. As the time from harvest increases, the regenerated stands increase on yearly growth and total stand carbon sequestered. Although the GHG emissions from the decay of the harvested wood gradually increase, carbon sequestered from the regenerated trees increase at a faster rate. Because of this, the difference in total effect on carbon between the no action and action alternatives diminish, thereby lessening the apparent effect of the harvest on the overall carbon budget (carbon sequestered minus GHGs) over time. The commenters did not define 'near-term'. The BLM disclosed current levels of carbon storage; analyzing changes in carbon within the first few years after harvest activities would not show meaningful effects as carbon is still stored in the harvested wood products.

29. The assumption that the carbon in soils and dead wood will not be affected by logging is improper.

Response:

The BLM acknowledged that carbon in soils and dead wood are potentially affected by treatment activities, however, because of the extreme difficulty in measuring and quantifying the effect of logging on carbon pools other than live and dead trees, only changes to carbon levels from the harvested and live trees, and the GHG emissions from harvest activities were quantified. The EA (p. 88) states:

"Specifically, this analysis estimates the carbon flux associated with implementation of the action alternatives roughly fifty years from the present, incorporating: a) differences in carbon storage in live, dead, and organic soil carbon pools; b) the intermediary flux from wood products produced by the Proposed Action through this period; and c) "secondary" C fluxes associated with logging and hauling systems.

Analysis of carbon flux associated with changes in live and dead pools attributable to the Proposed Action ("a", above) used relatively simple tree-/stand-scale models available with FVS. This method considers

changes due to succession and forest management in all major live and dead carbon pools within the action area (treated units). This FVS model does not directly incorporate microclimatic effects, dynamics of herb and shrub understory layers, stable soil pools, or the C flux associated with actual harvest equipment. Herb and shrub carbon pools are relatively small compared to total stores, and are similar between young and mature stands (USDI-BLM 2008, p. App-29). Soil carbon represents 9-20% of total site carbon but is the most stable C store and the least likely to respond to disturbance. For example, 60-year old forests and 450- year old forests have similar soil carbon storage (Harmon, et al. 1990). Flux of carbon from merchantable wood products ("b", in previous paragraph) produced from the action alternatives during the 50 year analysis window was estimated following synthesis in USDI-BLM (2008, p. App-30). GHG emissions from forestry activities necessary to harvest these units ("secondary emissions", "c" in previous paragraph) were estimated following (WRI 2010), and added to FVS estimates (see below).".

30. The BLM should consider the social cost of climate change.

Response:

Calculating the social cost of carbon is something that is associated with U.S. Policy-making (Greenspan and Callan 2011).

The appropriate time for conducting a cost benefit analysis for timber production versus other use of resources is during the land use allocation planning process. The land use allocation designated for the lands in the Lost Creek area are Matrix and Riparian Reserves. A decision as to whether or not to allocate the Lost Creek project area to the purpose of timber production has already been made. This issue is above and beyond the scope of analysis during site-specific project planning. The Lost Creek project is implementing the objectives identified for the land use allocations determined by the Eugene RMP (EA, p. 1-3).

Although the analysis proposed is beyond current BLM guidance and the scope of this project, a carbon analysis was conducted for the Lost Creek Projects and the results are documented in the EA (p. 86-91). In the carbon analysis, the effects of the alternatives of the Lost Creek project on carbon storage are insignificant (EA, p. 90).

The EA (p. 90) puts the risk and uncertainty of the project in context: The total 50-year carbon flux of the action alternatives compared to the no action would not produce measurable change in global climates considering current detection and modeling technologies. To place this carbon flux in context, the total 50-year carbon flux associated with the action alternatives would:

- Represent approximately 0.01% of carbon stored on BLM-managed lands in western Oregon (USDI-BLM 2008). BLM-managed lands in western Oregon support approximately 1% of the carbon stored in the western U.S., and 0.02% of global carbon stores in vegetation, soil, and detritus (USDI-BLM 2008).
- Be below the indicative threshold (25,000 metric tons) set by the EPA under a mandatory reporting rule for non-forestry regulated entities (74 FR 56373).

31. The BLM analysis of carbon and climate change is outdated because it tiers to the 1994 FEIS.

Response:

The current best available science and the analysis from the 2008 FEIS (USDI-BLM) were used to complete a thorough an in-depth analysis of the issue for this EA (p. 86-91).

The Lost Creek EA acknowledged the weaknesses of the 1994 PRMP FEIS while also recognizing where it is still appropriate to use.

"The 1994 PRMP FEIS considered speculative and did not consider the indirect effects of carbon flux associated with the Plan on aspects of the affected environment including wildlife, economies, human health, and other resources (Appendix V, p. 217). The 1994 PRMP FEIS concluded that with implementation of any of the alternatives at the Plan level, "the overall impact on the global atmospheric carbon dioxide balance would be much less than 0.01 percent of the total" (p. 4-1). Based on the small estimated permanent flux of carbon that would be associated with the cumulative effects of the action alternatives following the 1994 PRMP FEIS, the high uncertainty in any such estimate of carbon flux (and other sources of GHGs), and the response of global climate to these GHG's, conclusions in the 1994 PRMP FEIS remain valid and applicable to the cumulative effects of the action alternatives." (EA, p. 90-91)

32. The BLM should complete a full socioeconomic analysis of the effects of climate change compared to the revenues generated by increased logging. The BLM should use the dollar values estimated in the Interagency Working Group on the Social Cost of Carbon. 2015. Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis

Response:

The appropriate time for conducting a cost benefit analysis for timber production versus other allocation of resources is during the land use allocation planning process. The land use allocation designated for the lands in the Lost Creek area are Matrix and Riparian Reserves. A decision as to the commitment of resources and the goals and objectives of the project area was made in the Record of Decision for the Eugene RMP. This issue is above and beyond the scope of analysis during site-specific project planning. The Lost Creek project is implementing the objectives identified for land use allocations as determined by the Eugene RMP (EA, p. 1-3). The project does not propose to increase harvest activities beyond levels decided upon in the Eugene RMP.

33. The BLM should not analyze greenhouse gas emissions and effects to climate change at the global scale.

Response:

Carbon was analyzed at multiple scales within this project. In addition to analyzing at the global scale, Carbon was analyzed the site scale within the harvest units (EA, p. 89) and at the scale of western Oregon BLM lands (EA, p. 90).

34. Regeneration Harvest and Thinning have different effects on carbon.

Response:

The BLM analyzed four action alternatives that included one alternative with regeneration harvest and three alternatives with thinning. By comparing these alternatives, the difference in effects of thinning versus regeneration harvest on carbon was analyzed. The difference in effects from thinning and regeneration harvest in this project are clearly displayed in the EA (p. 89-90).

General

35. Section 29 includes a proposed regeneration harvest unit located within an unroaded area that is contiguous with the Mt June inventoried roadless area on the adjacent Umpqua National Forest. This area has been identified for potential wilderness by Oregon Wild and the Sierra Club. Commenters assert the roadless area has value beyond that of potential wilderness.

Response:

Land Use Allocations are determined at the RMP level. Although Oregon Wild and the Sierra Club desire the area to be protected as potential wilderness, it does not meet the minimum size criteria even when considered with adjacent U.S. Forest Service administered lands. (EA, p. 21)

Harvest activities would utilize helicopter logging and no new road construction is proposed for harvest of this section.

Effects to resources including to northern spotted owls, Riparian Reserves (including water quality), and recreational opportunities and visual resources from harvest in Section 29 were analyzed. The EA compared the effects of regeneration harvest (Alternative 2), thinning harvest (Alternative 3), and no harvest (Alternatives 1 and 4) in Section 29.

The BLM has reviewed the information provided by commenters and did not find any new information that was not already sufficiently considered in the effects analysis.

36. We would like the BLM to shift their methods for protecting resources from that of firm prescriptive restrictions to one that focuses on descriptive end-results; in other words, describe what you would like the end result to be rather than prescribing how to get there. There are a variety of operators that work in the Eugene BLM market area with a variety of skills and equipment. Developing an EA and contract that firmly describes how any given unit shall be logged may inherently limit the abilities of certain operators.

Response:

Impacts from various logging systems are generally well-known and logging systems are designed for acceptable levels of resource impacts. Where multiple systems may achieve objectives, logging systems are analyzed as optional in the document. Where site-specific conditions such as soils sensitive to compaction or slope gradient limit operational feasibility or would result in effects exceeding the direction given in the Eugene RMP, logging systems are prescribed.

37. PDF 41 includes an arbitrary seasonal restriction period identified as "the annual dry season", and limits ground based activities during these months. The PDF should focus on actual weather conditions.

Response:

The PDF of concern does allow for flexibility based on actual conditions. The PDF reads "To minimize soil compaction and increase in bulk density, limit ground disturbing activities and ground-based skidding and yarding to the annual dry season (**typically July 1 to Oct. 1) when soils provide the most resistance to compaction**. Soil moisture determinations would be conducted prior to start of all ground based operations." [emphasis added]

38. The Maps in the EA do not specify which areas will be thinned and which will be subject to regeneration harvest.

Response:

Although the map showing which stands were being considered for regeneration harvest was inadvertently left out of the EA, the treatment type is referenced in the analysis appropriately where the type of harvest affects impacts analysis. The acreages of regeneration harvest and thinning are disclosed by Township-Range-Section throughout the EA. No changes in proposed harvest type, with the exception of both thinning and regeneration harvest being considered for Section 29, were proposed from the map included in the scoping letter which clearly displayed which areas were being considered for regeneration and which for thinning.

39. The BLM should consider the effects of private industrial forest management including clear-cutting in the cumulative effects analysis.

Response:

BLM appropriately considered the cumulative effects of private timber management actions. BLM assumed all private industrial forest lands would be intensively managed on 40 to 60 year rotations, would not provide habitat for species such as northern spotted owls, and would comply with the Oregon Forest Practices Act for stream protections. (EA, p. 39-41, p.44-45, p. 48-49, p. 68, p. 71, p. 73, p. 84-85, and Appendix D.)

40. The BLM glosses over the many potential reasons for treatment deferral in the project area on page five of the EA. We would like the BLM to provide a more detailed and specific description of why certain stands are eliminated from the project. … We would like the BLM to provide an explanation of why these units were removed from the project and what the long-term plan is for implementing the needed treatments that were initially proposed.

Response:

Due to the sensitivity of sites such as cultural resources and wildlife sites, the reasons for deferral are maintained in the project record rather than publicly disclosed in the EA. Disclosing the locations for only non-sensitive sites would, by elimination, disclose which areas were deferred due to the presence of sensitive resources. This EA makes no recommendation or decision for future management of any areas not considered for treatment under an action alternative.

41. Page 73 of the EA includes the following statement: "Since the institution of the 1995 Eugene RMP, changes to environmental regulations, along with increased controversy over regeneration harvesting, have resulted in timber management focusing almost exclusively on thinning to achieve ASQ." We highly recommend that the BLM amend the EA by removing the language on "controversy".

Response:

The commenter is correct that BLM was referring to social controversy on page 73 of the EA. This clarification was inadvertently omitted from the EA, but the BLM has decided not to revise and reissue the EA because it is clearly understood in context and is not critical to the analysis or ultimate decision as to which alternative best meets the purpose and need for action.