Appendix W – Responses to Comments

This appendix summarizes the substantive comments that the BLM received during the public comment period for the Draft RMP/EIS and provides the BLM responses to those comments.

On April 24, 2015, the BLM released the Draft RMP/EIS announcing a 90-day comment period that would conclude on July 23, 2015. On July 13, 2015, the BLM extended the comment period on the Draft RMP/EIS until August 21, 2015. The BLM received approximately 4,500 comments on the Draft RMP/EIS during the comment period. The BLM received comments from individuals, groups, organizations, businesses, elected officials, Federal, state, and local government agencies, and Tribes. All comments submitted to the BLM during the comment period are available at http://www.blm.gov/or/plans/rmpswesternoregon/comments.php.

The BLM considered all comments submitted during the comment period. The BLM treated all submissions equally and did not give different consideration to submissions based on geographic location, organizational affiliation, or other status of the respondents. Additionally, the BLM did not give different consideration to comments based on the number of submissions making the same comment.

The BLM reviewed comments to identify substantive comments, which are comments that—

- Question, with reasonable basis, the accuracy of information in the Draft RMP/EIS,
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis,
- Present new information relevant to the analysis,
- Present reasonable alternatives other than those analyzed in the Draft RMP/EIS, and
- Cause changes or revisions in one or more of the alternatives (USDI BLM 2008, p. 66).

The BLM summarized these substantive comments into 'comment summaries.' Comment summaries are statements that identify and describe specific issues or concerns. The BLM combined similar concerns voiced in multiple letters into one comment summary.

This appendix presents the comment summaries and the BLM responses by issue topic. The comment summaries and responses are intended to be explanatory in nature; if there are any inadvertent contradictions between this appendix and the main chapters of the Proposed RMP/Final EIS, the main chapters of the Proposed RMP/Final EIS present the controlling information.

Comment Summaries and Responses to Comments

Purpose and Need for Action

1. **Comment Summary:** The RMP gives more weight to the ESA than the O&C Act. The O&C Act should have priority because it is more specific. Timber production is the overriding objective on O&C lands. Secondary uses, such as recreation and the protection of watersheds and wildlife habitat, are permitted, but they must be accomplished simultaneously, in coordination with and not at the expense of, timber production to benefit local communities.

   Response: The O&C Act established sustained-yield timber production as the primary or dominant use of O&C lands in western Oregon. However, when implementing the O&C Act, the BLM must do

so in full compliance with a number of subsequent laws that direct how the BLM accomplishes the statutory direction. The BLM based the purpose and need for this RMP revision on the laws that apply to the BLM. The BLM designed the alternatives to make a substantial and meaningful contribution to meeting each of the purposes (USDI BLM 2015, pp. 10–11). Thus, all of the purposes of the action are essential, and none has more importance than other purposes or 'overrides' other purposes. An alternative that would fail to meet any one of the purposes would not be a reasonable alternative.

2. **Comment Summary:** The BLM continues to base its approach on a narrow interpretation of BLM O&C statutory requirements that has resulted in timber dominance biases throughout the DEIS. We request that you at least consider the case law review provided by Scott and Brown (2007) that runs contrary to your interpretations of the O&C Act.

   Response: The Draft RMP/EIS provided excerpts of the relevant provisions of the O&C Act and other major authorizing laws and regulations (USDI BLM 2015, pp. 13–14). The BLM has not interpreted the O&C Act, beyond the section in Chapter 1 of the Draft RMP/EIS on the O&C Act and the FLPMA. In that section the BLM stated, "Based on the language of the O&C Act, the O&C Act's legislative history, and case law, it is clear that sustained-yield timber production is the primary or dominant use of the O&C lands in western Oregon" (USDI BLM 2015, p. 15). While this statement is arguably an interpretation, it represents the plain language in existing case law on the O&C Act. The commenter suggests that the interpretation in Scott and Brown (2007) is contrary to the BLM interpretation. The BLM has reviewed Scott and Brown (2007), an article published in the Journal of Environmental Law and Litigation, which provides the authors' views of the history of the O&C lands and the O&C Act. To the extent the above cited statement in the Draft RMP/EIS represents BLM legal interpretation, it relies on existing case law. The interpretation of the purpose of the O&C Act in Scott and Brown (2007) rests on the assertion that case law on the O&C Act was wrongly decided. It is beyond the scope of an RMP to address whether court decisions were wrongly decided.

   The commenter does not explain how they believe that the BLM presenting excerpts from the O&C Act or stating the interpretation of the O&C Act in existing case law has resulted in "timber dominance biases" in the RMP revision. The BLM based the purpose and need for this RMP revision on the laws that apply to the BLM. One of the purposes is to provide a sustained yield of timber. Neither the commenter nor Scott and Brown (2007) argue that the provision of sustained yield of timber is not a mandate of the O&C Act. Nonetheless, this is one of several purposes, all of which are essential, and none has more importance than other purposes.

   Also in the section in Chapter 1 of the Draft RMP/EIS on the O&C Act and the FLPMA, the BLM provided the explanation of how the BLM will apply the direction in the O&C Act to resources managed under the authority of the FLPMA (USDI BLM 2015, pp. 14–19). This discussion arguably represents interpretation by the BLM of the requirements of the O&C Act and the FLPMA. The commenter does not raise issue with these explanations.

3. **Comment Summary:** The O&C Act specifically mandates that BLM forest management must have the objective of "contributing to the stability of local communities and industries" 43 USC 1181(a). Resource based industries have high rates of volatility and are therefore unpredictable. The increase in timber production with this plan may not be productive in the long term despite what models show. Introducing greater instability to local economies is an inappropriate outcome for BLM land management.

Response: One of the purposes for the RMP revision is to provide for a sustained yield of timber. The O&C Act requires that the O&C lands be managed "for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities" (43 U.S.C. 1181a). This passage of the O&C Act establishes "contributing to the economic stability of local communities and industries" as one of the purposes for which the O&C Act authorizes and directs the selling, cutting, and removing of timber in conformity with the principle of sustained yield. It would be inconsistent with the plain language of the O&C Act to interpret "contributing to the economic stability of local communities and industries" as a goal separate from or competing with sustained-yield timber production (i.e., selling, cutting and removing timber in a particular manner and intensity, within certain time-frames, and in particular locations as the exclusive means of achieving the O&C Act goals). The commenter's unsubstantiated speculation that timber production may not be "productive in the long-term" does not alter the clear legal mandate from the O&C Act to provide for a sustained yield of timber.

The Draft RMP/EIS analyzed the current conditions and trends in economic conditions and analyzed the effects of the alternatives on timber production (USDI BLM 2015, pp. 478–480, 484–488, 509–516). This analysis specifically and quantitatively describes changes in timber supply, demand, and value of timber over time, and acknowledges likely future changes in timber markets based on reasonable assumptions. This analysis looks in detail at the effects of the alternatives on community stability and resilience, and acknowledges the inherent volatility related to natural resource goods, such as timber production. This analysis also describes in detail the importance of timber production from the decision area under the alternatives and the Proposed RMP to jobs and earnings. The commenter does not identify any flaws in this methodology or errors in the analysis. The commenter makes assertions and predictions related to the influence of timber production on communities, but provides no information different than that used in the analysis.

4. **Comment Summary:** The purpose and need statement improperly makes recovery of the northern spotted owl a required component of the RMP although there is no statutory requirement in the ESA or any other statute to pursue recovery. Large blocks of old-growth spotted owl habitat should not be a required component of the RMP. Protection of old growth forests on O&C lands is not justified, as it is not contributing to the conservation of the spotted owl. Competition from the barred owl overrides any other conservation measures.

   Response: It is within the BLM's discretion to include contributing to the conservation and recovery of threatened and endangered species as one of the purposes for this RMP revision. The ESA (Endangered Species Act) requires Federal agencies to use their legal authorities to promote the conservation purposes of the ESA. The ESA defines 'conservation' as the methods and procedures, which are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to the ESA, are no longer necessary. Thus, it is within the BLM's authority under this mandate in the Endangered Species Act to pursue the conservation and recovery of the northern spotted owl as part of the purpose for this action. The Draft RMP/EIS explained why this purpose for the northern spotted owl necessarily includes maintaining large, contiguous blocks of late-successional forest and maintaining older and more structurally-complex, multi-layered conifer forests, based on the existing scientific information and the results of previous analyses. The commenter does not specifically address the information in the Draft RMP/EIS explaining why maintaining large, contiguous blocks of late-successional forest and maintaining older and more structurally-complex, multi-layered conifer forests are necessary components of northern spotted owl conservation.

Among the existing information on the conservation needs of the northern spotted owl, the BLM addressed recommendations in the recovery plan for the northern spotted owl. Recovery plans are advisory in nature, rather than regulatory. However, the recovery plan for the northern spotted owl provides information and advice relevant to the BLM's purpose of contributing to the conservation and recovery of the northern spotted owl, because recovery plans describe reasonable actions and criteria that the U.S. Fish and Wildlife Service considers necessary to recover ESA-listed species. As detailed in the Draft RMP/EIS, the BLM considered information from the recovery plan in formulating the purpose for the action, but did not rely on the information in the recovery plan exclusively, in part because as the commenter points out, the recovery plan is advisory rather than a binding, regulatory requirement.

As concluded in the Draft RMP/EIS, the northern spotted owl population is under severe biological stress in much of western Oregon, and this population risk is predominately due to competitive interactions between northern spotted owls and barred owls (USDI BLM 2015, pp. 774–804). This conclusion is consistent with the recovery plan findings, as well as BLM's independent findings through the Draft RMP/EIS. The Draft RMP/EIS acknowledges that habitat management by the BLM alone will not be sufficient to produce stable populations of northern spotted owls in some (though not all) of the provinces within the planning area. The Draft RMP/EIS specifically details the indispensable role of habitat on BLM-administered lands in several provinces. The Draft RMP/EIS further identifies and analyzes the effects of a potential mitigation measure of BLM participation in barred owl management (USDI BLM 2015, pp. 40, 778–804). The Draft RMP/EIS concludes that habitat management by the BLM combined with the mitigation measure related to barred owl management would result in substantially improved outcomes for the northern spotted owl populations. Barred owl management alone, without maintaining large blocks of habitat and reserving older, more structurally-complex forest, would not meet the purpose of the action to contribute to the conservation and recovery of the northern spotted owl. The Draft RMP/EIS describes in detail the continuing conservation needs of the northern spotted owl related to habitat management by the BLM (USDI BLM 2015, pp. 774–804). Thus, the analysis in the Draft RMP/EIS supports the conclusion that the greatest contribution to conservation and recovery of the northern spotted owl by the BLM would come from a combination of habitat management and participation in barred owl management.

Additionally, contributing to the conservation and recovery of the northern spotted owl would contribute to the additional purpose of providing a sustained yield of timber, particularly in light of the guidance for the RMP revision to provide a high degree of predictability and consistency about implementing land management actions and a high degree of certainty of achieving desired outcomes (see the Guidance for Development of All Action Alternatives section in Chapter 1). Contributing to the conservation and recovery of the northern spotted owl is necessary to ensure predictable supply of sustained-yield timber production in the future. Further population declines of the northern spotted owl could result in additional restrictions on timber harvest, disrupting and limiting the BLM's ability to provide a sustained yield of timber. By protecting and managing habitat now, and participating in barred owl management, the BLM can best avoid future, disruptive restrictions on sustained-yield timber production.

5. **Comment Summary:** The purpose and need statement needs to include reducing catastrophic fire risk. It appears that every action alternative developed by the BLM will include logging techniques known by the agency to increase fire hazard. This directly inhibits the alleged purpose and need of increasing fire resiliency.

Response: The purpose of the action includes restoring fire-adapted ecosystems to increase fire resiliency. The Draft RMP/EIS explained that the northern spotted owl recovery plan recommends active management within the dry forest landscape to restore ecosystem resiliency. Additionally, in order to provide for a sustained yield of timber from public lands under the O&C Act, BLM management must account for potential loss of this timber to fire. To the extent possible within the decision area, increasing fire resiliency will positively influence fire risk (USDI BLM 2015, p. 10). Adding an additional purpose of reducing catastrophic fire risk would not result in any different alternatives than those considered in the Draft RMP/EIS.

Contrary to the commenter's assertion, the analysis in the Draft RMP/EIS clearly describes that the management approach in the Uneven-Aged Timber Area would result in greater resistance to replacement fire and that the action alternatives as a whole would result in an overall increase in fire resistance relative to current conditions (USDI BLM 2015, pp. 188–195). Furthermore, all alternatives would reduce the fire hazard relative to current conditions (USDI BLM 2015, pp. 200–204). The commenter does not identify any errors in the analysis.

6. **Comment Summary:** Addressing climate change and maximizing carbon storage should be part of the purpose and need for action.

   Response: The BLM based the purpose and need for this RMP revision on the laws that apply to the BLM. The BLM has no specific legal mandate to address climate change and maximize carbon storage comparable to the legal mandates reflected in the purpose and need for this RMP revision, such as, for example, the purpose of contributing to the conservation and recovery of threatened and endangered species in accordance with the Endangered Species Act. As such, addressing climate change and maximizing carbon storage are not part of the purpose and need for this RMP revision.

   The BLM has various climate-related policies, including the following:
   - Executive Order 13514, which directs agencies to measure, manage, and reduce greenhouse gas emissions toward agency-defined targets for agency actions such as vehicle fleet and building management
   - Executive Order 13653, which directs agencies to assess climate change related impacts on and risks to the agency's ability to accomplish its missions, operations, and programs and consider the need to improve climate adaptation and resilience
   - Secretarial Order 3289, which establishes a Department of the Interior approach for applying scientific tools to increase understanding of climate change and to coordinate an effective response to its impacts
   - Departmental Manual 523 DM 1, which directs the Department of the Interior agencies to integrate climate change adaptation strategies into programs, plans, and operations

   These policies address topics related to greenhouse gas emissions and climate change, but none directs the BLM to manage BLM-administered lands specifically for carbon storage. This RMP revision is consistent with these policies to the extent they address topics within the scope of this planning effort.

   The Draft RMP/EIS analyzed the effects of the alternatives on carbon storage and greenhouse gas emissions, assessed climate change-related impacts, and considered potential effects of the alternatives in adapting to climate change (USDI BLM 2015, pp. 132–164).

The Draft RMP/EIS analysis demonstrates that the No Timber Harvest reference analysis represents the management approach that would maximize carbon storage (USDI BLM 2015, pp. 134–136), which is not a reasonable alternative. Specifically, a purpose of maximizing carbon storage would conflict with the purpose of providing a sustained yield of timber, which is an explicit legal mandate for the BLM from the O&C Act.

The Draft RMP/EIS demonstrates that it would not be possible for the BLM to design alternatives specifically to "address climate change." The BLM can only address potential effects of the alternatives in adapting to climate change in general, qualitative terms, because of the uncertainties associated with projecting future climate change, and the uncertainties associated with the interaction of future climate change and land management approaches (USDI BLM 2015, pp. 157–159).

7. **Comment Summary:** The stated obligation to provide revenues to Oregon counties by means of increased harvest on BLM-administered forested land is, at present, a politically created necessity and definitely not one arising from a dearth of actual potential revenue sources. Admittedly, these particular tax issues are the province of the elected government of the state of Oregon and are not within the administrative or constitutional purview of the Federal Government or its agencies. However, the prominent citation of this revenue requirement in the purpose and need section of the Draft RMP/EIS makes them an absolutely legitimate and most germane subject for discussion.

   Response: The commenter mischaracterizes the purpose and need for action in the Draft RMP/EIS. The purposes of the action include providing a sustained yield of timber. The purposes of the action do not include, as the commenter mistakenly claims, providing revenues to Oregon counties. The commenter mistakenly claims that the purpose and need section of the Draft RMP/EIS prominently cites "this revenue requirement." The O&C Act directs that the U.S. Government shall distribute a portion of the receipts from timber sales on O&C lands to the counties with O&C lands. While this distribution of a portion of timber receipts is indisputably a requirement on the U.S. Government under the O&C Act, the purpose and need for this RMP revision does not specifically include providing revenues to counties. In fact, the only mention of revenues in the purpose and need section is to recite the FLPMA passage that specifically provides that if there is any conflict between its provisions and the O&C Act related to management of timber resources or the disposition of revenues from the O&C lands and resources, the O&C Act prevails (i.e., takes precedence) (43 U.S.C. 1701 note (b), USDI BLM 2015, p. 6).

   The purposes of the action do not include, as the commenter mistakenly claims, increasing the timber harvest in the decision area. The purposes of the action include providing a sustained yield of timber, but that discussion does not specify any qualitative or quantitative target for timber production, beyond the broad direction that alternatives must make a substantial and meaningful contribution to meeting each of the purposes for the action (USDI BLM 2015, pp. 6, 10–11). In fact, several of the action alternatives would produce less sustained-yield timber harvest than the No Action alternative. The commenter's characterization of the purpose and need for action is mistaken and ignores the plain language in the purpose and need discussion in the Draft RMP/EIS.

8. **Comment Summary:** The BLM states that a purpose is to coordinate with the Coquille Tribe on management of "adjacent and nearby" BLM lands. This purpose will undermine Congressional intent by weakening standards on adjacent Federal lands, for the express purpose of ensuring the Tribal forest is managed different than the rest of BLM lands.

Response: The purposes of the action include coordinating management of lands surrounding the Coquille Forest with the Coquille Tribe. However, the commenter mistakenly claims that this purpose would somehow weaken standards on adjacent Federal lands. There is nothing in the purpose of coordinating with the Coquille Tribe that necessarily would require "weakening standards." The alternatives in the Draft RMP/EIS consider a range of management approaches, some of which increase protection for some resources and decrease protection for other resources. The commenter does not specify which "standards" they believe would be weakened.

Furthermore, the commenter mistakenly claims that there is an "express purpose" of ensuring that the Coquille Forest would be managed differently than the BLM-administered lands. The Draft RMP/EIS made no such statement of purpose. In fact, the Draft RMP/EIS stated that the management of the Coquille Forest is subject by law to the standards and guidelines of forest plans for adjacent or nearby Federal forested land and that the analysis of effects to BLM-administered forested land would generally reflect the analysis of effects to resources on the Coquille Forest under each alternative (USDI BLM 2015, pp. 10, 661–662). The BLM has added additional text to this discussion in the Proposed RMP/Final EIS to clarify the relationship between the RMP and the management of the Coquille Forest.

9. **Comment Summary:** The EIS should explain the need for logs sourced from public lands, when hundreds of millions of board feet are harvested in Oregon and exported to our commercial competitors every year.

Response: The need to source logs from BLM public lands within the planning area is described in the purpose and need for action (see Chapter 1). The purpose of the action includes providing a sustained yield of timber. The O&C Act requires that the Oregon and California Railroad Revested Lands and reconveyed Coos Bay Wagon Road Grant lands (O&C lands) be managed "for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities" (43 U.S.C. 1181a). For the public domain lands, the FLPMA requires that public lands be managed "on the basis of multiple use and sustained yield unless otherwise specified by law" (43 U.S.C. 1701 [Sec. 102.a.7]). The FLPMA also requires that "the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands" (43 U.S.C. 1701 [Sec. 102.a.12]).

The Draft RMP/EIS explained that public lands have been a major supplier of timber to mills in western Oregon for decades (USDI BLM 2015, pp. 484–486). Once timber is harvested, it flows across the region to various processing centers. There are few restrictions on how federal timber flows across western United States, with the exception of the ban on the export of timber from federal lands and substituting timber from federal lands for exported private timber. The amount of timber harvest on other lands and the movement of harvested timber do not alter the applicable statutes, regulations, and policies that direct that the BLM-administered lands in the planning area provide a sustained yield of timber.

Relationship of the RMPs to the Northwest Forest Plan

10. **Comment Summary:** In proposing such substantive changes as outlined in the action alternatives, the BLM needs to more clearly explain why they are proposing such a substantial departure from the science-based NWFP.

    Response: The Draft RMP/EIS described the need for revising the RMPs: the substantial, long-term departure from the timber management outcomes predicted under the 1995 RMPs and new scientific information and policies related to the northern spotted owl (USDI BLM 2015, p. 5). The BLM planning regulations require that RMPs "shall be revised as necessary based on monitoring and evaluation findings, new data, new or revised policy, and changes in circumstances affecting the entire plan or major portions of the plan" (43 CFR 1610.5–6). The BLM has formulated a purpose for the RMP revision consistent with applicable statutes, regulations, and policies (USDI BLM 2015, pp. 5–10). Finally, the Draft RMP/EIS explained the relationship of the RMP revision to the Northwest Forest Plan, and specifically, how the BLM addressed the Aquatic Conservation Strategy of the Northwest Forest Plan in the RMP revisions (USDI BLM 2015, pp. 20–23).

    Since the adoption of the Northwest Forest Plan, there has been a robust debate about effective riparian management strategies for conservation and recovery of ESA-listed fish. Some reviews have argued that active management in riparian forests results in short-term adverse effects on fish habitat and water quality and have proposed increased restrictions on active management within Riparian Reserve to maximize stream shading and the total number of trees available for recruitment to streams (e.g., Frissell *et al*. 2014, Pollock and Beechie 2014). Other reviews have argued that a reliance on passive restoration will compromise attainment of long-term ecological goals and have proposed more and varied active management approaches within Riparian Reserve to facilitate the growth of larger trees and the development of more complex and diverse riparian forests (e.g., Reeves *et al*. in press).

    The purpose and need for this RMP revision clearly identified new scientific information that the Northwest Forest Plan did not address; the alternatives in the Draft RMP/EIS address this new scientific information. The analysis supporting the Northwest Forest Plan was largely based on information in the FEMAT Report, which addressed a very large and diverse assessment area. In contrast, the Draft RMP/EIS contains detailed information on conditions within the much smaller planning area and includes quantified modeling and analysis specific to the alternatives in the Draft RMP/EIS. The BLM based the analysis is the Draft RMP/EIS on detailed information that was not available when the Northwest Forest Plan was approved and presents objective, reproducible analytical conclusions. The analytical methodology and data in the Draft RMP/EIS is sound.

    This comment from the August 21, 2015 letter from NMFS to the BLM includes the characterization of the action alternatives as presenting a "substantial departure" from the Northwest Forest Plan, which is not well founded. Each action alternative differs in some components from the Northwest Forest Plan (i.e., the No Action alternative), as is appropriate given the purpose and need for the RMP revision and the new information. However, for many resources, some action alternatives are more protective than the No Action alternative; some action alternatives are less protective. For many important features and outcomes, all action alternatives are more protective than the No Action alternative (e.g., the extent of the Late-Successional Reserve, the protection of older, more structurally-complex forest, the no-thin inner zone of the Riparian Reserve, habitat development for the fisher).

In a December 18, 2015 letter from NMFS to the BLM,[58] NMFS clarified that they believe that the approach in the Northwest Forest Plan is not the only approach that would ensure the protection and recovery of threatened and endangered fish, and that the best available science also supports an approach modified from Alternative A or D that would include a one site-potential tree height Riparian Reserve on fish-bearing streams and perennial streams.

11. **Comment Summary:** The Northwest Forest Plan, particularly the Aquatic Conservation Strategy, Survey and Manage program, and reserves, should be treated as a conservation baseline below which any reductions in buffer widths and protections are treated as inconsistent with the Plan's ecosystem management and biodiversity emphasis.

    Response: The range of alternatives in an EIS for an RMP must present reasonable alternatives to accomplishing the stated purpose and need for action. As explained in the Draft RMP/EIS, the purpose and need for this RMP revision is different from the purpose and need for the Northwest Forest Plan and the 1995 RMPs (USDI BLM 2015, pp. 20–21). The Northwest Forest Plan is not a statute or regulation, and the BLM is not required to retain the purpose and need for the Northwest Forest Plan. The BLM adopted a purpose and need for this RMP revision that is consistent with the agency's discretion and obligations under the FLPMA, O&C Act, ESA, Clean Water Act, and other applicable statutes, as detailed in Chapter 1. While the Northwest Forest Plan is represented in the analysis as the No Action alternative, the reasonable action alternatives to accomplish the purpose and need for this RMP revision include alternatives that differ from the Northwest Forest Plan. The Draft RMP/EIS explained why some elements of the Northwest Forest Plan are not included in the action alternatives in the Draft RMP/EIS, with specific detail on the Survey and Manage program and the Aquatic Conservation Strategy (USDI BLM 2015, pp. 21–23). Nevertheless, the No Action alternative does include all of the elements of the Northwest Forest Plan, and, thus, the BLM has retained the discretion to include these elements in the development of the Proposed RMP, because they are analyzed in detail in the Draft RMP/EIS. Because the range of alternatives represents the full spectrum of reasonable alternatives to accomplishing the purpose and need for this RMP revision, the range of alternatives is appropriate.

    Furthermore, as detailed in the response above, the Northwest Forest Plan (i.e., the No Action alternative) is intermediate among the action alternatives for many important features and outcomes and less protective than all of the action alternatives for many important features and outcomes. Thus, the Proposed RMP and several of the action alternatives would provide greater protections than the Northwest Forest Plan for some resources. Additionally, as noted above, in a December 18, 2015 letter from NMFS to the BLM, NMFS clarified that they believe that the approach in the Northwest Forest Plan is not the only approach that would ensure the protection and recovery of threatened and endangered fish, and that the best available science also supports an approach modified from Alternatives A or D that would include a one site-potential tree height Riparian Reserve on fish-bearing streams and perennial streams.

[58] The BLM includes discussion of the December 18, 2015 letter from NMFS in these responses because the letter provides information from a cooperating agency with special expertise relevant to this comment response (see Chapter 4). NMFS provided this letter not only in their role as a cooperating agency but also in the context of the ESA consultation process. Finally, this letter has particular relevance to these comment responses, because the letter directly modifies or alters the comments in their August 21, 2015 letter submitted during the Draft RMP/EIS public comment period.

12. Comment Summary: The Aquatic Conservation Strategy should be maintained under all action alternatives and protection strengthened.

Response: As detailed in the Draft RMP/EIS, implementation of the No Action alternative has been resulting in improvements in watershed condition (USDI BLM 2015, pp. 221–223, 231, 291–294). The Northwest Forest Plan included the Aquatic Conservation Strategy to fulfill nine broad and aspirational objectives. The management objectives for the Riparian Reserve in the action alternatives and Proposed RMP do not explicitly include the nine Aquatic Conservation Strategy objectives as presented in the Northwest Forest Plan. However, the management objectives and management direction of the Proposed RMP provide a comparable overall management approach to resources, as summarized in **Table W-1** below.[59]

Table W-1. Comparison of Northwest Forest Plan Aquatic Conservation Strategy objectives and the Proposed RMP

Northwest Forest Plan Aquatic Conservation Strategy Objectives	**Proposed RMP Management Objectives and Management Direction**
1 – *Maintain/restore watershed and landscape-scale features to ensure protections of aquatic systems*	**Riparian Reserve management objective** – *Maintain and restore natural channel dynamics and processes and the proper functioning condition of riparian areas, stream channels and wetlands by providing forest shade, sediment filtering, wood recruitment, stability of stream banks and channels, water storage and release, vegetation diversity, nutrient cycling and cool and moist microclimate.* **Riparian Reserve management direction** – *Design culverts, bridges, and other stream crossings for the 100-year flood event, including allowance for bed load and anticipated floatable debris. Design stream crossings with ESA-listed fish to meet design standards consistent with existing ESA consultation documents that address stream crossings in the decision area.* **Hydrology management direction** – *Implement road improvement, storm proofing, maintenance, or decommissioning to reduce or eliminate chronic sediment inputs to stream channels and waterbodies. This could include maintaining vegetated ditch lines, improving road surfaces, and installing cross drains at appropriate spacing.*
2 – *Maintain/restore spatial and temporal connectivity within and between watersheds*	**Fisheries management objective** – *Maintain and restore access to stream channels for all life stages of aquatic species.* **Fisheries management direction** – *Replace stream crossings that currently or potentially block or hinder fish passage with crossings that allow aquatic species to pass at each life stage and at a range of flows.*
3 – *Maintain/restore the physical integrity of the aquatic system*	**Riparian Reserve management objective** – *Maintain and restore natural channel dynamics and processes and the proper functioning condition of riparian areas, stream channels and wetlands by providing forest shade, sediment filtering, wood recruitment, stability of stream banks and channels, water storage and release, vegetation diversity, nutrient cycling and cool and moist microclimate.* **Riparian Reserve management objective** – *Maintain water quality and streamflows within the range of natural variability, to protect aquatic*

[59] This comparison gives pertinent examples of management objectives and management direction of the Proposed RMP that address similar resources as the nine Aquatic Conservation Strategy objectives and is not intended to provide a complete description of how the Proposed RMP would address these resources (**Appendix B** – Management Objectives and Direction).

Northwest Forest Plan Aquatic Conservation Strategy Objectives	Proposed RMP Management Objectives and Management Direction
	biodiversity, provide quality water for contact recreation and drinking water sources. **Fisheries management objective** – *Improve the distribution and quantity of high quality fish habitat across the landscape for all life stages of ESA-listed, BLM special status species, and other fish species.* **Fisheries management direction** – *Create spawning, rearing, and holding habitat for fish using a combination of accepted techniques including log and boulder placement in stream channels, tree tipping, and gravel enhancement.*
4 – *Maintain/restore water quality*	**Riparian Reserve management objective** – *Maintain water quality and streamflows within the range of natural variability, to protect aquatic biodiversity, provide quality water for contact recreation and drinking water sources.* **Riparian Reserve management objective** – *Meet ODEQ water quality criteria.* **Riparian Reserve management objective** – *Maintain high quality water and contribute to the restoration of degraded water quality for 303(d)-listed streams.* **Riparian Reserve management objective** – *Maintain high quality waters within ODEQ-designated Source Water Protection watersheds.* **Hydrology management objective** – *Maintain water quality within the range of natural variability that meets ODEQ water quality standards for drinking water, contact recreation, and aquatic biodiversity.*
5 – *Maintain/restore the sediment regime*	**Riparian Reserve management objective** – *Maintain and restore natural channel dynamics and processes and the proper functioning condition of riparian areas, stream channels and wetlands by providing forest shade, sediment filtering, wood recruitment, stability of stream banks and channels, water storage and release, vegetation diversity, nutrient cycling and cool and moist microclimate.* **Hydrology management direction** – *Implement road improvement, storm proofing, maintenance, or decommissioning to reduce or eliminate chronic sediment inputs to stream channels and waterbodies. This could include maintaining vegetated ditch lines, improving road surfaces, and installing cross drains at appropriate spacing.* **Hydrology management direction** – *Suspend commercial road use where the road surface is deteriorating due to vehicular rutting or standing water, or where turbid runoff may reach stream channels.* **Hydrology management direction** – *Decommission roads that are no longer needed for resource management and are at risk of failure or are contributing sediment to streams, consistent with valid existing rights.*
6 – *Maintain/restore timing, magnitude, duration of instream flows*	**Riparian Reserve management objective** – *Maintain water quality and streamflows within the range of natural variability, to protect aquatic biodiversity, provide quality water for contact recreation and drinking water sources.* **Riparian Reserve management direction** – *Design culverts, bridges, and other stream crossings for the 100-year flood event, including allowance for bed load and anticipated floatable debris. Design stream crossings with ESA-listed fish to meet design standards consistent with existing ESA consultation*

Northwest Forest Plan Aquatic Conservation Strategy Objectives	Proposed RMP Management Objectives and Management Direction
	documents that address stream crossings in the decision area.
7 – *Maintain/restore floodplain inundation and water table elevation*	**Riparian Reserve management objective** – *Maintain water quality and streamflows within the range of natural variability, to protect aquatic biodiversity, provide quality water for contact recreation and drinking water sources.* **Riparian Reserve management direction** – *Design culverts, bridges, and other stream crossings for the 100-year flood event, including allowance for bed load and anticipated floatable debris. Design stream crossings with ESA-listed fish to meet design standards consistent with existing ESA consultation documents that address stream crossings in the decision area.*
8 – *Maintain/restore riparian plant species/structural diversity*	**Riparian Reserve management objective** – *Maintain and restore natural channel dynamics and processes and the proper functioning condition of riparian areas, stream channels and wetlands by providing forest shade, sediment filtering, wood recruitment, stability of stream banks and channels, water storage and release, vegetation diversity, nutrient cycling and cool and moist microclimate.* **Riparian Reserve management direction** (Class II and III outer zones) – *Thin stands as needed to promote the development of large, open grown trees, develop layered canopies and multi-cohort stands, develop diverse understory plant communities, and allow for hardwood vigor and persistence. Apply silvicultural treatments to increase diversity of riparian species and develop structurally-complex stands.*
9 – *Maintain/restore habitat to support plant, invertebrate, and vertebrate riparian-dependent species*	**Riparian Reserve management objective** – *Contribute to the conservation and recovery of ESA-listed fish species and their habitats and provide for conservation of special status fish and other special status riparian associated species.* **Riparian Reserve management objective** – *Maintain and restore natural channel dynamics and processes and the proper functioning condition of riparian areas, stream channels and wetlands by providing forest shade, sediment filtering, wood recruitment, stability of stream banks and channels, water storage and release, vegetation diversity, nutrient cycling and cool and moist microclimate.* **Rare Plants and Fungi management objective** – *Provide for conservation and contribute toward the recovery of plant species that are listed, or are candidates for listing, under the ESA.* **Rare Plants and Fungi management objective -** *Provide for the conservation of Bureau special status plant and fungi species.* **Wildlife management objective** – *Conserve and recover species that are listed, or are candidates for listing, under the ESA and the ecosystems on which they depend.* **Wildlife management objective** – *Implement conservation measures that reduce or eliminate threats to Bureau Sensitive species to minimize the likelihood of and need for listing of these species under the ESA.*

The Proposed RMP addresses all four components of the Aquatic Conservation Strategy: Riparian Reserve, Key Watersheds, Watershed Analysis, and Watershed Restoration. For each of these

components, the Proposed RMP has updated or modified the component, in light of the purpose and need for the RMP revision, the management objectives in the Proposed RMP, new scientific information, and the BLM's experience in implementing the 1995 RMPs. The Draft RMP/EIS explained the relationship between the alternatives in the Draft RMP/EIS and the Aquatic Conservation Strategy of the Northwest Forest Plan (USDI BLM 2015, pp. 22–23).

The Proposed RMP addresses all components of the Aquatic Conservation Strategy, in an updated and modified form. For those resources addressed by the Aquatic Conservation Strategy that are related to the purposes of this RMP revision, including the conservation and recovery of threatened and endangered fish species, the Proposed RMP would provide comparable protection to the No Action alternative.

13. **Comment Summary:** The interim Riparian Reserve identified in the FEMAT Report was designed to benefit fish as well as riparian species. The DEIS/RMP failed to take a holistic multispecies perspective with proposed riparian reserve widths in action alternatives. We assert that RMP programmatic planning and analysis must value the multispecies benefits of a two tree riparian reserve and not discount them as if salmonids were the only species of concern. The DEIS analysis of riparian reserve does not address all the values provided by riparian reserve. The analysis focused exclusively on ESA-listed fish and water quality, but riparian reserve also provides value to non-aquatic species such as the spotted owl, marbled murrelet, and Pacific fisher, which spend disproportionate time on lower slopes near streams. The FEIS should expand the buffer widths in Riparian Reserve to account for increasing stressors from potential extreme weather events (floods, droughts) due to climate change.

    Response: Consistent with the purpose and need for this RMP revision, the BLM established management objectives for the Riparian Reserve in the action alternatives and the Proposed RMP that focused on fish habitat and water quality. This is in contrast to the nine, broad objectives of the Aquatic Conservation Strategy of the Northwest Forest Plan, which included supporting well-distributed populations of riparian-dependent species, based on the U.S. Forest Service's organic statute and implementing regulation. For this RMP revision, the BLM adopted a purpose and need that is consistent with the agency's discretion and obligations under the FLPMA, O&C Act, ESA, Clean Water Act, and other applicable statutes. The BLM based the management objectives for the Riparian Reserve in the action alternatives and the Proposed RMP on this purpose and need.

    Although the management objectives for the Riparian Reserve in the action alternatives and Proposed RMP do not explicitly include the nine Aquatic Conservation Strategy objectives as presented in the Northwest Forest Plan, the Proposed RMP does contain comparable management objectives and management direction, as summarized above. Furthermore, the discussion in the Draft RMP/EIS analyzed the effect of the different Riparian Reserve strategies on the resources associated with the nine Aquatic Conservation Strategy objectives. The commenter mistakenly asserts that the analysis did not address the effect of the different Riparian Reserve strategies on non-aquatic species. The different Riparian Reserve strategies and different analytical assumptions related to Riparian Reserve management were all included in the vegetation modeling, which in turn informed the analysis of effects on all species, including the northern spotted owl, marbled murrelet, and fisher (USDI BLM 2015, pp. 100–102, 987–1043). These disclosures of terrestrial species effects presented a reasoned analysis based on detailed, quantitative information, including the effects of past actions and reasonably foreseeable future actions, and thus provided a 'hard look' at the effects of the alternatives, including changes in Riparian Reserve design.

The commenter does not explain how increasing the Riparian Reserve widths would account for "increasing stressors from potential extreme weather events." For example, the analysis of stream shading in the Draft RMP/EIS demonstrated that reducing the Riparian Reserve width from two site-potential tree heights under the No Action alternative to one site-potential tree height under Alternatives A and D, coupled with the management direction within the Riparian Reserve under Alternatives A and D, would not result in a measurable difference in stream shading. This conclusion is consistent with the FEMAT Report (FEMAT 1993, pp. V-27 – V-28). The commenter does not explain why they believe the second site-potential tree height width is necessary to provide stream shading or to provide other functions of the Riparian Reserve, or how extreme weather events, such as floods and droughts, would alter the stream shading or other functions of the Riparian Reserve. The BLM analysis does not support the commenter's view that the second site-potential tree height is necessary to achieve the purpose and need of this RMP revision and management objectives of the Proposed RMP.

14. **Comment Summary:** A recent review of the NWFP's ACS in light of scientific advances since 1993 (Frissell *et al*. 2014) documented a host of reasons to recommend that Riparian Reserve should be expanded and logging activities within them reduced compared to the baseline NWFP (this is contrary to the BLM DEIS and therefore the DEIS remains out-of step with current science).

    Response: The BLM has reviewed Frissell *et al*. 2014, as detailed in the Fisheries section of Chapter 3. This unpublished report to the Coast Range Association does not present any new scientific information. Although it presents numerous citations to existing scientific information (many of which are also cited in the Draft RMP/EIS), the report itself is a collection of policy recommendations and critiques of administrative policies and legislative proposals, which are generally reflected in the substantive comments on the Draft RMP/EIS summarized in this appendix. As such, Frissell *et al*. 2014 does not provide any new scientific information relevant for the analysis of the effects of the alternatives.

15. **Comment Summary:** The Riparian Reserve created by the Northwest Forest Plan (USDA and USDI 1994) was developed by a broad group of scientists and reflected the general scientific consensus at the time as to the level of protection needed for the recovery of salmon over a 100-year time frame and was considered by the Federal courts to be the "bare minimum" necessary for the recovery of salmon. Several Riparian Reserve options proposed at that time were more protective than the current proposed BLM DEIS Riparian Reserve, but were rejected as inadequate. The DEIS is (implicitly) making an extraordinary claim; that the FEMAT science team (and the Federal courts) were in error, and that up to 81 percent of the existing Riparian Reserve network can be opened for substantially increased levels of timber harvest (i.e., the Preferred Alternative B), with little effect on salmon and other riparian-dependent species and the habitat upon which they depend.

    Response: The management objectives for the Riparian Reserve in the FEMAT Report (which supported the Northwest Forest Plan) included supporting well-distributed populations of riparian-dependent species. The FEMAT Report concluded that the cumulative effectiveness of riparian buffers would be maximized within a distance of one site-potential tree height from the channel or less (FEMAT Report, pp. V-27 – V-29). The only effects that the FEMAT Report identified for riparian buffers beyond one site-potential tree height from streams were for effects on riparian microclimate and wildlife habitat. These are effects that were relevant to the Riparian Reserve management objective in the Northwest Forest Plan of supporting well-distributed populations of riparian-dependent species; but the FEMAT Report contains no analysis that riparian buffers of two site-potential tree heights are necessary for the protection of ESA-listed fish or water quality, which

are management objectives for the Riparian Reserve in the action alternatives and Proposed RMP in this RMP revision. Two of the action alternatives in the Draft RMP/EIS, Alternatives A and D, would include a Riparian Reserve of one site-potential tree height on all streams. The FEMAT Report did not directly consider such a Riparian Reserve design. Nevertheless, the analytical conclusions in the FEMAT Report support that such a design would maximize the cumulative effectiveness of such a buffer for effects on fish habitat. Thus, for the purposes of the management objectives for action alternatives and Proposed RMP in this RMP revision, the commenter's assertion that the FEMAT Report "rejected as inadequate" the Riparian Reserve designs in all of the action alternatives in Draft RMP/EIS is not well founded.

Moreover, the Draft RMP/EIS does not claim, implicitly or explicitly, that the FEMAT science team was in error. The management objectives for the Riparian Reserve in the FEMAT Report (and Northwest Forest Plan) differ from the management objectives for the Riparian Reserve in the action alternatives in the Draft RMP/EIS.

This comment, included in the August 21, 2015 letter from NMFS to BLM, concluding that "up to 81 percent of the existing Riparian Reserve network can be opened for substantially increased levels of timber harvest" under Alternative B is based on incorrect analysis, as explained below in response to a similar comment. The acreage available for sustained-yield timber harvest would be substantially smaller under Alternative B than under the No Action alternative. In a December 18, 2015 letter from NMFS to the BLM, NMFS acknowledged that these comments were in error and asked that they be ignored.

The Draft RMP/EIS does not claim, implicitly or explicitly, that the action alternatives would have "little effect on salmon and other riparian-dependent species" As explained above, the Draft RMP/EIS analyzed the effects of the alternatives on ESA-listed fish and water quality (USDI BLM 2015, pp. 219–233, 286–318). That analysis demonstrated the comparative effect of the alternatives. The Draft RMP/EIS does not make any conclusion about whether such effects are "little."

The comment from NMFS does not specify which Federal court they claim considers the Riparian Reserve design in the Northwest Forest Plan to be the "bare minimum" necessary for the recovery of salmon, but the BLM is unaware of any such court ruling. There is no such finding in *Seattle Audubon Society v. Lyons*, 871 F. Supp. 1291 (W.D. Wash. June 6, 1994), which addressed challenges to the Northwest Forest Plan. In a December 18, 2015 letter from NMFS to the BLM, NMFS specifically withdrew all of their comments related to interpreting judicial decisions on the Northwest Forest Plan. NMFS specifically clarified that they believe that the approach in the Northwest Forest Plan does not represent a minimum level of protection. As noted above, NMFS clarified that the best available science also supports an approach modified from Alternative A or D that would include a one site-potential tree height Riparian Reserve on fish-bearing streams and perennial streams.

16. **Comment Summary:** The BLM should fully comply with the Survey and Manage provisions of the Northwest Forest Plan in all the alternatives until Federal agencies protect all remaining late-successional habitat and the reserves are fully functional. The program might not be needed if coarse filter reserves and older forests were fully functional, but that is not the case. Abandonment of the Survey Manage program will increase extinction rates, cause the loss of ecological processes, and reduce small Sensitive species buffers that greatly augment habitat connectivity in the highly fragmented landscape of western Oregon BLM lands. The BLM must discuss how the decreased protection for Survey and Manage species will affect the functionality of the Northwest Forest Plan for the U.S. Forest Service. The Survey and Manage program has resulted in significant gains in

knowledge, reduced uncertainty about conservation, and developed useful new inventory methods for rare species. The BLM presents no quantified analysis of the population levels or trends for any of the Survey and Manage species to be dropped from the program or the handful that would be managed as Bureau Sensitive species.

Response: The Survey and Manage measures were included in the Northwest Forest Plan to respond to a goal of ensuring viable, well-distributed populations of all species associated late-successional and old-growth forests. As explained in the Draft RMP/EIS, this goal of the Northwest Forest Plan was founded on a U.S. Forest Service planning regulation, which did not and does not apply to the BLM, and is not a part of the purpose for this RMP revision (USDI BLM 2015, pp. 21–22). The BLM based the purpose for this RMP revision on the statutes and regulations that apply to the BLM, as detailed in Chapter 1. The BLM will not use the RMP revision process to adopt regulations like those that apply only to the U.S. Forest Service. Because the range of alternatives represents the full spectrum of reasonable alternatives to accomplishing the purpose and need for this RMP revision, as described below, the range of alternatives is appropriate.

The species viability goal of the Northwest Forest Plan is not part of the purpose for this RMP revision. The Draft RMP/EIS explained that the purpose and need for the RMP revision differs from the purpose and need for the Northwest Forest Plan and reflects the BLM's determination that it can achieve the goals of the O&C Act and other applicable statutes without the Survey and Manage measures (USDI BLM 2015, pp. 20–22). The commenter argues that the Survey and Manage measures must be included in the RMP because it is still needed. The Northwest Forest Plan did not include the Survey and Manage measures simply for the sake of having a Survey and Manage approach. Had that been the case, the Survey and Manage measures would have been reflected in the Purpose and Need statement of the Northwest Forest Plan and included in the design of one or more of its alternatives. Instead, the Survey and Manage measures were only first identified in the Final Supplemental EIS for the Northwest Forest Plan as one mitigation measure to increase the likelihood of achieving "viable populations, well-distributed across their current range, of species known (or reasonably expected) to be associated with old-growth forest conditions" (USDA FS and USDI BLM, 1994, p. 3&4-129) – a goal which was founded on a U.S. Forest Service planning regulation that, as explained above, did not and does not apply to the BLM.

The Draft RMP/EIS explained that the BLM does not need the Survey and Manage measures to avoid species extinctions or to achieve the purposes of the RMP revision or to meet BLM's obligations under applicable law and regulation. The Proposed RMP represents a management approach that provides habitat for species "associated with old-growth forest conditions." As detailed in the analysis in the Proposed RMP/Final EIS, the Proposed RMP would—

- Allocate a larger Late-Successional Reserve network than the No Action alternative;[60]
- Reserve all of the older and more structurally-complex forests, which generally represents "old-growth forest conditions" and thus, by definition, provides high quality habitat for Survey and Manage species;
- Reserve more of the combined mature and structurally-complex forest—which provides potential habitat for Survey and Manage species—than the No Action alternative;
- Provide management direction within the Harvest Land Base to provide for snags, down woody debris, leave trees and islands, and a diversity of tree species in the canopy layer,

[60] The Final Supplemental EIS for the Northwest Forest Plan identified that the Late-Successional Reserve network provides key benefits to Survey and Manage species (USDA FS and USDI BLM 1994a, pp. 3&4-114 – 3&4-177). All action alternatives and the Proposed RMP would allocate a Late-Successional Reserve network larger than what is provided in the Northwest Forest Plan and thus would generally provide a larger network of habitat for Survey and Manage species.

which would maintain diversity at the stand level, providing a variety of unique habitat conditions to support diverse fungi, lichens, bryophytes, and vascular plants, including Survey and Manage species; and

- Continue to provide management for many of the Survey and Manage species as Bureau Sensitive species (see the Rare Plants and Fungi and Wildlife sections of Chapter 3).

As a result of these allocations and management direction, the Proposed RMP would protect the majority of the currently known sites of Survey and Manage species in the reserve land use allocations and would provide a greater increase in the amount of potential habitat for Survey and Manage species over time than the No Action alternative, as detailed in the Rare Plants and Fungi and Wildlife sections of Chapter 3 and **Appendix S** – Other Wildlife (e.g., **Table 3-2**, **Table 3-3**, **Table 3-4**, **Table S-5**, **Table S-6**).

The BLM has other management tools besides allocating reserves for conserving species that are associated with late-successional and old-growth forests. Although the species viability goal of the Northwest Forest Plan is not part of the purpose for this RMP revision, the BLM would provide management for Survey and Manage species that are also Bureau Sensitive species, consistent with BLM policy, under all action alternatives and the Proposed RMP. As detailed in the Rare Plants and Fungi and Wildlife sections of Chapter 3, **Appendix N** – Rare Plants and Fungi, and **Appendix S** – Other Wildlife, of the 35 Survey and Manage plant and fungi species in the decision area, 5 are also Bureau Sensitive species, and of the 13 Survey and Manage wildlife species in the decision area, 4 are also Bureau Sensitive species. The BLM Special Status Species policy directs that the BLM address Bureau Sensitive species and their habitats in the planning process, and, when appropriate, identify and resolve significant land use conflicts with Bureau Sensitive species. In implementing the RMP, the BLM will ensure that actions affecting Bureau Sensitive species will be carried out in a way that is consistent with the objectives for managing those species and their habitats at the appropriate spatial scale. The application of the BLM Special Status Species policy to provide specific protection to species that are listed by the BLM as Sensitive "… on lands governed by the O&C Act must be consistent with timber production as the dominant use of those lands" (USDI BLM 2008, BLM Manual 6840 – Special Status Species Management, sections 6840.06.2A – 6840.06.2E). The BLM has addressed the Survey and Manage species that are also Bureau Sensitive species in the analysis for this RMP revision, and has resolved land use conflicts as discussed below. Therefore, even if habitat and site protection described above were not sufficient to provide adequate habitat for such species, before they could need listing under the ESA, the BLM would be able to include such species on the BLM Sensitive species list and provide necessary additional management to avoid the need for listing.

The commenter suggests that the Survey and Manage measures must be included in the RMP to prevent loss of ecological processes, such as nutrient cycling and nitrogen fixation. The analysis in the Draft RMP/EIS does not support the conclusion that the Survey and Manage measures are necessary to preserve ecological processes. Survey and Manage species undoubtedly provide ecological processes including nitrogen fixation and nutrient cycling. However, the analysis in the Draft RMP/EIS demonstrates that such loss of Survey and Manage species is not reasonably foreseeable under the action alternatives, given that the action alternatives would generally provide more habitat for Survey and Manage species than the No Action alternative and that the BLM would provide management for Survey and Manage species that are also Bureau Sensitive species. Additionally, the Survey and Manage species are, by definition, rare and limited in occurrence. Thus, any speculative loss of ecological processes would be extremely limited in geographic scope, and it would not be possible to detect any measurable difference among the alternatives in providing these

ecological processes. There is no scientific method by which the BLM could measure the possible loss of ecological processes related to Survey and Manage species in the analysis.

The commenter asserts that the Survey and Manage measures must be included in the RMP to provide habitat connectivity. As explained above, all action alternatives and the Proposed RMP would generally provide a larger network of habitat for Survey and Manage species and that the amount of habitat for Survey and Manage species would generally increase over time, as detailed in the Rare Plants and Fungi and Wildlife sections of Chapter 3 and **Appendix S** – Other Wildlife.

The commenter asserts that the BLM must address how eliminating the Survey and Manage measures will affect the "functionality" of the Northwest Forest Plan for the U.S. Forest Service. As described above, all action alternatives and the Proposed RMP would generally provide a larger network of habitat for Survey and Manage species and that the amount of habitat for Survey and Manage species would generally increase over time. Thus, all action alternatives and the Proposed RMP would generally provide a comparable or greater contribution to habitat for Survey and Manage species than the current condition. In addition, the majority of currently known sites for Survey and Manage species would be generally protected in the reserve land use allocations under the action alternatives and the Proposed RMP. The action alternatives and the Proposed RMP would provide continued management of Survey and Manage species that are Bureau Sensitive species. In light of this approach, the analysis in the Proposed RMP/Final EIS does not support the conclusion that the any of the action alternatives or the Proposed RMP would result in a loss of "functionality" of the Northwest Forest Plan for the U.S. Forest Service.

The commenter urges retaining the Survey and Manage measures because these measures have produced new information and new inventory methods. The BLM does not dispute that the implementation of the Survey and Manage measures has resulted in an increase in information about such species and the development of inventory methods. While this increase in knowledge is an inevitable and beneficial result of such a program, it is not necessary to achieve the purposes of the RMP revision or to comply with any law or regulation applicable to the BLM.

The commenter states that the Draft RMP/EIS does not include quantified population analysis of the Survey and Manage species. The commenter is correct. Analysis in an EIS must provide a 'hard look' at the effects of the alternatives. A 'hard look' is a reasoned analysis containing quantitative or detailed qualitative information (USDI BLM 2008, p. 55). The Draft RMP/EIS detailed the methodology for analyzing the effects of the alternatives on Survey and Manage species based on habitat abundance (USDI BLM 2015, pp. 423, 682–683). This analysis provided detailed and quantitative information, which supported reasoned analytical conclusions about the effects of the alternatives on Survey and Manage species (USDI BLM 2015, pp. 428–439, 683–694). The Proposed RMP/Final EIS has added discussion to explain why the BLM did not provide a quantified population analysis of the Survey and Manage species (see the Summary of Analytical Methods in the Rare Plants and Fungi and Wildlife sections of Chapter 3). Survey and species data on Survey and Manage species are incomplete and insufficient to provide for any meaningful analysis of population trends. Instead, the BLM conducted the analysis of effects on Survey and Manage species using the available information related to habitat conditions for these species.

17. **Comment Summary:** By considering action alternatives that would change the BLM's land management, the agency is essentially considering pulling out of the multi-agency Northwest Forest Plan. The BLM cannot do this without causing the entire Northwest Forest Plan to crumble; that is, although the action agency here is the BLM, its decisions will by necessity change the validity of the U.S. Forest Service's actions and land management assumptions. The DEIS fails to address or

analyze the environmental and cumulative impacts of these alternatives on the continuing validity of the Northwest Forest Plan as a whole.

Response: The Draft RMP/EIS clearly states that this RMP revision would replace the 1995 RMPs and thereby replace the Northwest Forest Plan for the management of BLM-administered lands in western Oregon (USDI BLM 2015, p. 21). The analysis in the Draft RMP/EIS assumed that the U.S. Forest Service would continue to manage their lands within the analysis area consistent with their existing plans (i.e., the Northwest Forest Plan) (USDI BLM 2015, pp. 95–96). Thus, the analysis in the Draft RMP/EIS presents a cumulative analysis of the BLM managing of BLM-administered lands under each alternative and the U.S. Forest Service managing of National Forests under the Northwest Forest Plan.

Whether the U.S. Forest Service would need to conduct additional analysis for implementation of U.S. Forest Service projects, and whether the U.S. Forest Service would continue to elect to manage National Forests under the Northwest Forest Plan in the future are questions beyond the scope of this RMP revision process.

Range of Alternatives

18. **Comment Summary:** The No Action alternative of the Draft RMP/EIS is based on implementation of the original 1995 RMPs "as written," not as currently practiced, which makes comparisons of it to the action alternatives false and the entire analysis flawed.

    Response: The No Action alternative for a RMP revision is no change from the current management direction or level of management intensity. In the case of this RMP revision, the implementation of the 1995 RMPs has not been consistent with the assumptions of the 1995 RMPs, as detailed in the BLM plan evaluations (USDI BLM 2012). As explained in the Draft RMP/EIS, this long-standing failure to implement the 1995 RMPs as written is part of the stated need for the RMP revision (USDI BLM 2015, p. 5). The Draft RMP/EIS further explained that the BLM cannot analyze continuation of the current practices as the No Action alternative, because the current practices have been variable and are not sustainable, preventing the projection of the current practices into the future (USDI BLM 2015, pp. 77–78). Due to this variability in implementation, there is no particular 'snapshot' in time that the BLM could reasonably select as representative of the 1995 RMPs as implemented; any selection of such a 'snapshot' in time would be arbitrary, since past practice provides no rational basis upon which to project the continuation of practices at any given point in time into the future. The No Action alternative in the Draft RMP/EIS explicitly represents no change from the current management direction and thus constitutes the appropriate benchmark for comparison to the action alternatives.

    The Proposed RMP/Final EIS has added discussion of an alternative that would implement the 1995 RMPs at the sustained-yield timber harvest levels declared in the 1995 RMPs, and provided an explanation of why this alternative was considered but not analyzed in detail.

    Nevertheless, the Draft RMP/EIS and the Proposed RMP/Final EIS describe the combined effects of past implementation of the 1995 RMPs, in that the analyses identify a baseline of current conditions that reflects the effects of the actual implementation to date. As explained in the Draft RMP/EIS, the analyses incorporated the aggregate effect of past actions, including the actual implementation of the 1995 RMPs, into the existing baseline information (USDI BLM 2015, p. 94). The analyses of the effects of the alternatives compare future resource condition against this baseline, thus providing a

comparison of the effects of the alternatives to the baseline condition created by the actual implementation of the 1995 RMPs.

19. **Comment Summary:** The BLM should have analyzed the Natural Selection alternative in detail. The Natural Selection alternative limits harvest of timber to dead and dying trees because it can generate better wood, has hugely less impact on habitats than green tree removal and it retains optimal photosynthesis and tree productivity. The Natural Selection alternative produces more timber over the long term than other alternatives. The average volume of timber production across the landscape under the Natural Selection alternative is greater than BLM's preferred alternatives [*sic*] because it doesn't produce areas with little or no production. The Natural Selection alternative offers scientifically sound, ecologically credible and legally responsible solutions to the critical issues of the 21st century including, global climate change, species extinctions, and social-economic conditions.

    Response: The range of alternatives in an EIS for an RMP must present reasonable alternatives to accomplishing the stated purpose and need for action. As explained in the Draft RMP/EIS, the BLM did not analyze the Natural Selection alternative in detail, because it is not a reasonable alternative. Specifically, limiting the harvest of timber to trees that are dead or are dying would not be consistent with the requirements of the O&C Act and would not respond to the purpose for the action (USDI BLM 2015, p. 79). The commenter asserts that the Natural Selection alternative would, in fact, produce more sustained-yield timber than any of the alternatives analyzed in detail (i.e., more than the 486 MMbf/year under Alternative C), but provides neither an estimate of the amount of timber the Natural Selection alternative would provide or support for this claim. It would not be possible to quantify the amount of annual timber harvest for a program that would limit timber harvest to dead and dying trees because of the inherent unpredictability in the number of trees dying each year, their location, or their suitability for wood products. The commenter does not explain why they believe the Natural Selection alternative would produce more timber than any of the alternatives, or why such harvest would represent the annual productive capacity of the forest. Because the Natural Selection alternative would not offer for sale the annual productive capacity of the forest, it is not consistent with the O&C Act. Because the Natural Selection alternative would not provide a sustained yield of timber, it does not respond to the purpose for the action. Therefore, the Natural Selection alternative is not a reasonable alternative and need not be analyzed in detail.

20. **Comment Summary:** A small diameter alternative needs to be considered in the FEIS in order to provide an adequate range of alternatives under NEPA. None of the BLM alternatives focus exclusively on small diameter restoration treatments as the primary objective and thus the DEIS remains out-of-compliance with NEPA and best available science. Based on prior calculations (Kerr 2011) and a one-time entry for timber volume, this could potentially generate about 1.6 billion board feet from the Matrix and Adaptive Management Areas.

    Response: The range of alternatives in an EIS for an RMP must present reasonable alternatives to accomplishing the stated purpose and need for action. One of the purposes of the action is to provide for a sustained yield of timber. The Draft RMP/EIS explains that sustained yield of timber is the timber volume that a forest can produce in perpetuity at a given intensity of management (USDI BLM 2015, p. 892). An alternative designed for "one-time entry" with restoration as the primary objective would not provide sustained yield of timber. Limiting timber harvest to "one-time entry" and establishing restoration of some resource condition as the primary objective would preclude producing a given volume of timber in perpetuity at a given intensity of management, as required by the O&C Act and specifically described in the purpose for the action. Therefore, such an alternative

would not be a reasonable alternative. The Proposed RMP/Final EIS added discussion of this suggested alternative as an alternative considered but not analyzed in detail (see Chapter 2).

21. **Comment Summary:** Maximum timber production allowable under the O&C Act should be used as the baseline against which alternatives are compared. This maximized analysis should be the base point on which all other alternatives are measured against and compared, to reflect the true economic value of what these alternatives are costing our local communities.

    Response: An alternative that would provide "maximum timber production allowable under the O&C Act" would not be a reasonable alternative, because it would not meet other purposes of the action, including contributing to the conservation and recovery of threatened and endangered species, providing clean water, and restoring fire-adapted ecosystems. The Draft RMP/EIS does estimate the maximum timber production allowable under the O&C Act, noting that the amount is approximately the same as the amount estimated in the 2008 FEIS—1.2 billion board feet per year (USDI BLM 2015, pp. 261–262). Beyond approximating this timber volume, the BLM did not identify any need to use the "maximum timber production allowable under the O&C Act" as a reference analysis in comparison to the effects of the alternatives. The commenter does not explain how further analysis of this reference analysis would assist in interpreting the results of the analysis, beyond asserting that it is the appropriate baseline. The "maximum timber production allowable under the O&C Act" would produce substantially more timber harvest, and consequently higher payments to counties, than the alternatives; further analysis could give more precision to this analytical conclusion, but would not alter this conclusion. In summary, the "maximum timber production allowable under the O&C Act" is not a reasonable alternative; the amount of the "maximum timber production allowable under the O&C Act" is disclosed in the Draft RMP/EIS; and further analysis of the "maximum timber production allowable under the O&C Act" would not improve the analysis of the effects of the alternatives and is not essential to a reasoned choice among the alternatives.

22. **Comment Summary:** We recommend that at least two other alternatives be added to the final analysis. The first would be one that truly integrates and balances ecological, social, and economic values. The second would be a more "robust" alternative with a target harvest volume closer to biological growth.

    Response: The range of alternatives in an EIS for an RMP must present reasonable alternatives to accomplishing the stated purpose and need for action. When there are potentially a very large number of alternatives, such as this RMP revision, only a reasonable number of alternatives, covering the full spectrum of alternatives, must be analyzed in the EIS. The commenter does not specify the alternatives that they believe are reasonable and are not within the spectrum of alternatives analyzed in detail in the Draft RMP/EIS. The alternatives in the Draft RMP/EIS do "integrate and balance ecological, social, and economic values," to the extent those values are represented by the purposes of the action. The commenter does not specifically describe an alternative "with a target harvest volume closer to biological growth" that would meet the purposes of the action. The BLM presumes that such an alternative would be substantially similar to a "maximum timber production allowable under the O&C Act" alternative, which would not be a reasonable alternative, as explained in the comment above. The BLM has analyzed in detail the full spectrum of alternatives that would accomplish the purpose of the action. That is, it would not be possible to construct an alternative with more timber harvest that meets all of the purposes of the action.

23. **Comment Summary:** The design of the alternatives for conservation needs of the spotted owl far exceeds a need-based standard.

    Response: For the BLM to consider alternatives reasonable, alternatives must accomplish the purposes of the action, which include contributing to the conservation and recovery of threatened and endangered species, including the northern spotted owl. The BLM based the analysis of the effects of the alternatives on northern spotted owls, in part, on an evaluation of how the alternatives would address the conservation needs of the northern spotted owl (USDI BLM 2015, pp. 746–826). The commenter confuses the design of the alternatives with the analysis of the effects. Although the analysis of effects included an evaluation relative to the conservation needs of the northern spotted owl, the BLM designed the alternatives to contribute to the conservation and recovery of the northern spotted owl, among other purposes. The purpose of the action is not to satisfy a "need-based standard" for the northern spotted owl and no more; the purpose of the action includes contributing to the recovery of the northern spotted owl, which the alternatives do to varying degrees. Therefore, the alternatives presented in the Draft RMP/EIS represent reasonable alternatives to accomplishing the purpose of contributing to the conservation and recovery of the northern spotted owl, among other purposes. The commenter points to no legal constraint that would limit the purpose of BLM's action to a "need-based standard" of spotted owl conservation.

24. **Comment Summary:** The range of alternatives is too narrow and needs to include an alternative with a larger Harvest Land Base. The BLM may have arbitrarily limited the size of the Harvest Land Base in any action alternative to 30 percent of the forest land in the decision area (DEIS p. 246). We recommend an additional action alternative that maximizes the size of the Harvest Land Base and reduces reserves to the minimum necessary.

    Response: The range of alternatives in an EIS for an RMP must present reasonable alternatives to accomplishing the stated purpose and need for action. The commenter mistakenly claims that the BLM limited the size of the Harvest Land Base and misunderstood the cited passage in the Draft RMP/EIS. The passage in the Draft RMP/EIS describes the outcome of the design of the alternatives, not a rule or limitation that the BLM imposed upon the design of the alternatives. The BLM designed the alternatives to meet all of the purposes of the action, and the resultant range of alternatives includes a Harvest Land Base that ranges from 12 to 30 percent of the decision area. Alternative C allocated the largest Harvest Land Base that would meet all of the purposes of the action. Alternative C allocated a Late-Successional Reserve network based, in part, on large blocks of habitat to meet size and spacing requirements, but no larger. To reduce the Late-Successional Reserve from Alternative C would not meet the size and spacing requirements described in the Draft RMP/EIS (USDI BLM 2015, pp. 7, 62, 750). Alternative C would provide the least improvement in marbled murrelet nesting opportunities and would increase the risk of nest predation compared to the other alternatives, and would provide no protection for future occupied nest sites in the Harvest Land Base (USDI BLM 2015, pp. 724–736). To provide less protection for the marbled murrelet would not meet the purpose of contributing to the conservation and recovery of the marbled murrelet. Alternative C allocated the smallest Riparian Reserve of any of the alternatives. The analysis in the Draft RMP/EIS identified lower potential wood supply and more susceptibility to increased water temperatures than the other alternatives (USDI BLM 2015, pp. 224–228, 232–233). To allocate a smaller Riparian Reserve would not meet the purposes of contributing to the conservation and recovery of ESA-listed fish and providing clean water. An alternative with a larger Harvest Land Base than the alternatives analyzed in detail would not meet all of the purposes of the action.

25. **Comment Summary:** The RMP should consider an alternative that would choose the 50 percent of the moist forest landscape with the highest structural complexity weighted by the value of a structurally-complex forest at that location. Management activities in this SC area can only promote or enhance the structural complexity of these stands. We envision that these large blocks of structurally-complex forest will migrate across the landscape as adjacent stands mature and become more ecologically valuable. Structurally-complex stands that fall out of the "best 50 percent" are available for variable retention harvest. Treat all dry forest stands that are not on a trajectory to achieve historic fire resilience within the next 30 years.

    Response: The Proposed RMP/Final EIS added discussion of this suggested alternative as an alternative considered but not analyzed in detail (see Chapter 2).

26. **Comment Summary:** The RMP should include an additional alternative which increases habitat for wildlife associated with early successional forests.

    Response: The range of alternatives in an EIS for an RMP must present reasonable alternatives to accomplishing the stated purpose and need for action. Habitat for wildlife associated with early successional forests is not one of the purposes for the action. The commenter does not explain how such an alternative would better respond to the purpose and need for action than the alternatives analyzed. Nevertheless, under all alternatives, the amount of early successional forest habitat would increase in abundance in 50 years. The commenter does not identify a need for a larger increase in the abundance of early successional forest habitat than would occur under the alternatives analyzed.

27. **Comment Summary:** All alternatives fall short of the requirement of the O&C Act when it comes to minimum harvest levels. Harvest levels and annual sale quantities (ASQs) need to be evenly distributed throughout the entire 2.4 million acres of BLM managed territory.

    Response: The O&C Act does not establish a minimum harvest level. As explained in the Draft RMP/EIS, the O&C Act requires that the BLM offer for sale annually "… not less than one-half billion feet board measure, or not less than the annual sustained-yield capacity when the same has been determined and declared …"(emphasis added). Previous BLM planning has determined and declared the annual sustained-yield capacity, as does this RMP revision, rendering obsolete the requirement to offer for sale "… not less than one-half billion feet board measure." The O&C Act does not establish a minimum harvest level in determining and declaring the annual sustained-yield capacity or how timber harvest should be distributed within the O&C lands.

28. **Comment Summary:** Sub-alternative B should be considered as a separate alternative on the issue of climate change because it decreases the Harvest Land Base and increases reserve areas.

    Response: As explained in the Draft RMP/EIS, Sub-alternative B is identical to Alternative B with the sole exception that Sub-alternative B included protection of the northern spotted owl habitat in all known and historical northern spotted owl sites (USDI BLM 2015, p. 53). The Draft RMP/EIS explained that the BLM focused the analysis of Sub-alternative B on the effects on timber production and northern spotted owls, because the modification from Alternative B would vary the approach to an element of northern spotted owl conservation, and the change in the sub-alternative would directly and explicitly alter the approach to timber production (USDI BLM 2015, p. 34). Sub-alternative B is almost identical in design to Alternative B, which is analyzed for all resources addressed in the Draft RMP/EIS, including climate change. The BLM NEPA Handbook explains that an alternative need not

be analyzed in detail if it is substantially similar in design to an alternative that is analyzed in detail (USDI BLM 2008, p. 52). Therefore, Sub-alternative B need not be fully analyzed for all resources, such as climate change.

29. **Comment Summary:** The action alternatives will open to timber harvest between 54 and 81 percent (509,000–780,000 acres) of the existing Riparian Reserve acreage, with the amounts varying by Alternatives A through D. The proposed DEIS alternatives will open Riparian Reserve acreage to timber harvest, either through transfer to commercial logging lands ("Matrix" lands) or by allowing heavy thinning (75–80 percent tree removal) in the outer zone of the Riparian Reserve.

    Response: This analysis in this comment from NMFS is incorrect and fundamentally mischaracterizes the land use allocations of the action alternatives. The commenter erroneously assumed that all acres that would be in the Riparian Reserve under No Action alternative but not under the action alternatives would be reallocated from Riparian Reserve to Harvest Land Base. In fact, most acres that would be within the Riparian Reserve under the No Action alternative but are not in the Riparian Reserve under action alternatives would be in Late-Successional Reserve or other reserve allocations under the action alternatives, and are not "open to timber harvest." The Harvest Land Base in the action alternatives would range from 14 to 30 percent of the BLM-administered lands. The data provided in the Draft RMP/EIS demonstrates the error of the commenter's analysis clearly. For example, the commenter claims that 555,662 acres would be "Transferred to matrix [sic] lands" under Alternative B; Table 2-5 in the Draft RMP/EIS shows that the Harvest Land Base in Alternative B, in its entirety, is only 556,335 acres. As noted in the Draft RMP/EIS, the Harvest Land Base in Alternative B (556,335 acres) would be substantially smaller than the Matrix under the No Action alternative (691,998 acres) (USDI BLM 2015, pp. 29, 47). In a December 18, 2015 letter from NMFS to the BLM, NMFS acknowledged that these comments were in error and asked that they be ignored.

    This comment from NMFS mischaracterizes Riparian Reserve thinning in both the No Action alternative and the action alternatives. The phrase "heavy thinning" is undefined and open to multiple interpretations. Characterizing thinning solely by the number of trees removed— "(75–80 percent tree removal)"—is not informative without additional stand metrics because of the variation in tree sizes in different stand conditions. The BLM included management direction that required that thinning retain both a threshold amount of canopy cover and a density of trees per acre. Alternatives B and C include management direction that requires that thinning in the outer zone of the Riparian Reserve must maintain at least 50 percent canopy cover and 80 trees per acre. The requirement to maintain at least 50 percent canopy cover ensures that at least half of the canopy of the stand would remain after thinning. Alternatives A and D include management direction that requires that Riparian Reserve thinning in the outer zone of the Riparian Reserve must maintain at least 30 percent canopy cover and 60 trees per acre (USDI BLM 2015, pp. 946, 959, 972, 981).

    The commenter erroneously characterizes the entire outer zone in the Riparian Reserve in all action alternatives as "heavy thinning in RR allowed." The action alternatives have specific and limited purposes for thinning the Riparian Reserve, which would not be relevant in most stand and site conditions. For example, given the management direction for thinning in the action alternatives, such thinning would rarely if ever be needed or appropriate in mature or structurally-complex stands, which currently comprise half of the acreage within one site-potential tree height of streams (USDI BLM 2015, p. 225). The Draft RMP/EIS explained that the analysis modeled timber harvest in the outer zone under the action alternatives only in stands 30–80 years old (USDI BLM 2015, p. 1028). Even in younger, managed stands, many stands would not need thinning for the purposes described in the management direction. The Draft RMP/EIS further explained that the analysis assumed only a

portion of the eligible acres would be thinned under the action alternatives, ranging from 15 percent under Alternatives A and D to 50 percent under Alternatives B and C, in light of the differing purposes for outer zone thinning in those action alternatives (USDI BLM 2015, pp. 1029–1033). Notwithstanding these statements and analysis in the Draft RMP/EIS, the commenter mistakenly asserts that all of the outer zone would be "open to timber harvest" under the action alternatives.

This comment from NMFS erroneously characterizes that there would be no "heavy thinning" allowed in the Riparian Reserve under the No Action alternative. The BLM and U.S. Forest Service implementation of the Northwest Forest Plan has routinely included thinning similar to that described for the action alternatives over the past 20 years of implementation. As stated in the Draft RMP/EIS, the BLM has thinned 17,461 acres within the Riparian Reserve since 1995 (USDI BLM 2015, p. 219). In fact, the modeling for the analysis in the Draft RMP/EIS reveals that the acreage of Riparian Reserve thinning would increase from current levels if the BLM were to adopt the No Action alternative, resulting in approximately 31,407 acres of Riparian Reserve thinning in the next decade. Notwithstanding this empirical information and modeling results, the commenter characterizes the entirety of the Riparian Reserve under the No Action alternative as a 'no-cut' area. The modeling for the analysis in the Draft RMP/EIS further shows that the acreage of Riparian Reserve thinning would be substantially higher under the No Action alternative than for any of the action alternatives, which would range from 3,655 to 15,958 acres of Riparian Reserve thinning in the next decade. In a December 18, 2015 letter from NMFS to the BLM, NMFS acknowledged that these comments misrepresented the implementation of the Northwest Forest Plan and asked that these comments be ignored.

30. Comment Summary: General descriptive sections of riparian management in the DEIS assert that tree removal in the outer Riparian Reserve will be in the upwards range of 75–80 percent removal (e.g., 60–80 TPA retention in stands that average 316 TPA DEIS **Figure 3-51**) whereas the analytical section of the DEIS indicates about 62 percent average removal (i.e., 120 TPA retention/196 TPA removal—see DEIS **Table C-12**). Further, in some instances the amount of tree removal is described in terms of canopy cover, whereas elsewhere it is described in terms of relative density.

Response: The commenter confuses management direction, which provides rules for implementation, with analytical assumptions about reasonably foreseeable implementation used in the modeling. For example, Alternative A includes management direction to "Thin stands as needed to ensure that stands are able to provide stable wood to the stream. Maintain at least 30 percent canopy cover and 60 trees per acre expressed as an average across the riparian reserve portion of the stand" (USDI BLM 2015, p. 946). The restrictions of 30 percent canopy cover and 60 trees per acre are not analytical assumptions or targets, but minimum thresholds that cannot be exceeded. The BLM described Riparian Reserve stand thinning thresholds in the action alternatives by canopy cover and trees per acre at the express request of NMFS staff working with the Riparian Technical Team (see Chapter 4).

The commenter misreads Table C-12 in the Draft RMP/EIS, which clearly states a modeling assumption for the Riparian Reserve of pre-commercial thinning to 120 trees per acre. This is not the commercial thinning resulting in tree removal from the Riparian Reserve. As explained in **Appendix C** – Vegetation Modeling and in the **Glossary**, pre-commercial thinning is the practice of reducing the density of trees within a stand, in which the trees killed are generally not merchantable and are not removed from the treated area (USDI BLM 2015, pp. 889, 1012).

The commenter correctly notes that the effects analysis and management direction describe a variety of different measures of stand conditions, but does not assert that the Draft RMP/EIS used any

inappropriate measures or suggest any alternative measures. The Draft RMP/EIS included different measures of stand conditions where appropriate for different purposes.

31. **Comment Summary:** The stated purpose for 'restoration' thinning in Riparian Reserve is to create structurally-complex forest habitat (Alternatives B and C), to produce large wood that is of a size sufficient to remain 'stable' in streams (Alternatives A and D), to reduce fire risk (Alternative A) or the non-conservation goal of allowing for commercial harvest (Alternatives A, B, C, and D), but specific criteria or determining when such 'restoration' is needed are lacking.

    Response: The commenter is correct in identifying the purposes of Riparian Reserve thinning to create structurally-complex forest habitat or to reduce fire risk in Alternatives B and C, to produce large wood that is of a size sufficient to remain 'stable' in streams, or reduce fire risk in Alternatives A and D. However, the commenter is in error in stating that the action alternatives have a goal of allowing for commercial harvest in the Riparian Reserve. The action alternatives would allow the BLM to make merchantable timber from thinning in the outer zone of Riparian Reserve available for sale under some circumstances, but only as a by-product of thinning needed to accomplish the purposes described above. The allowance to use commercial harvest to accomplish Riparian Reserve objectives does not differ under the No Action alternative and the action alternatives, though the specific restoration purpose of that thinning differs. Commercial timber harvest is not a goal of the Riparian Reserve under the No Action alternative or any of the action alternatives.

    The action alternatives and the Proposed RMP contain management direction that specifies when and where the BLM would implement Riparian Reserve thinning. The BLM would determine whether a specific Riparian Reserve stand needs thinning consistent with the management direction of the approved RMP as part of project-level design and analysis.

32. **Comment Summary:** Fixed width riparian retention figures do not allow for adaptive management practices that account for unique features within each management area.

    Response: The Northwest Forest Plan explicitly provided for adaptive modification of Riparian Reserve widths. This provision in the Northwest Forest Plan failed to result in adaptive modification of Riparian Reserve widths. The Proposed RMP includes Riparian Reserve widths that vary by classes of subwatersheds. However, neither the Proposed RMP nor the action alternatives would allow for adaptive modification of Riparian Reserve widths without an RMP amendment. Providing a fixed width of Riparian Reserve is consistent with the guidance for the development of the alternatives described in the Draft RMP/EIS, which directed that the BLM develop alternatives to provide a high degree of predictability and consistency about implementing land management actions and a high degree of certainty of achieving management objectives (USDI BLM 2015, p. 12).

33. **Comment Summary:** The BLM failed to consider a full range of alternatives related to wildfire and fuels management. The BLM later states, "All of the alternatives have similar management objectives and management direction regarding noncommercial natural hazardous fuels reduction treatments. Therefore, the BLM assumed in this analysis that similar types and amounts of treatments that have occurred over the past decade would continue in the future under any of the alternatives…" In essence, this is a "No Action Alternative" and for this reason the BLM needs to revise the RMP/DEIS because it did not consider a range of alternatives for fire. While the BLM asserts there would be no difference between alternatives relative to wildfire response, it is ignoring that the differences are there given the variations in Late Successional Reserve; post fire management of Late Successional

Reserve; snag retention; and, the variations in road systems. The BLM needs to address wildfire response both in the context of active fire as well as post fire activities.

Response: The alternatives considered in the Draft RMP/EIS do not vary the approach to natural hazardous fuels reduction treatments or wildfire management. The BLM treats natural hazardous fuels based on existing fuel hazards and operational constraints. The BLM has no basis for an alternate approach to treating natural hazardous fuels that would result in different effects on stand-level fire resistance, fire hazard, or landscape fire resilience, and the commenter suggests no alternate approach. The Draft RMP/EIS explained that increasing landscape-level fire resilience and stand-level fire resistance and decreasing stand-level fire hazard would increase the effectiveness of hazardous fuels treatments, and the alternatives do consider a range of approaches related to resilience, resistance, and hazard. However, it is not possible to determine any specific change in the effectiveness of hazardous fuels treatments resulting from the alternatives (USDI BLM 2015, pp. 211–212).

The alternatives considered in the Draft RMP/EIS do not vary the approach to wildfire management. The Draft RMP/EIS explained that the full range of wildfire response tactics would be available under all alternatives, and the maintenance of fire suppression-related infrastructure would not change among alternatives (USDI BLM 2015, p. 212). The BLM has no basis for an alternate approach to wildfire management that would result in different effects, and the commenter suggests no alternate approach. The commenter asserts, without foundation, that differences in Late Successional Reserve, post-fire management of Late-Successional Reserve, snag retention, and the variations in road systems would result in difference in wildfire management.

The BLM does not agree that the allocation of lands to the Late-Successional Reserve in and of itself would have any measurable or meaningful effect on wildfire management, and the commenter does not explain how they believe that the allocation of lands to the Late-Successional Reserve would affect wildfire management.

Snag retention requirements in post-fire management in the Late-Successional Reserve that leave snags in place could pose operational challenges for wildfire management if such stands experience an additional future wildfire. As noted in the Draft RMP/EIS, the BLM would be able to conduct salvage harvest for purpose of protecting human safety under all alternatives (USDI BLM 2015, p. 212). Nevertheless, any difference in the abundance of snags in a particular stand in the Late-Successional Reserve, either because of not conducting salvage harvest or in response to snag retention requirements, would represent a very small portion of the overall landscape. As noted in the Draft RMP/EIS, approximately 153,500 acres of the decision area have burned in the last 44 years, with 16 percent of the area burning twice (USDI BLM 2015, pp. 1051–1052). The acreage that has experienced two wildfires over nearly half a century constitutes less than 1 percent of the decision area. Any difference in wildfire management because of wildfire reoccurring in such stands in the Late-Successional Reserve and posing operational challenges in wildfire management would be small in extent, immeasurable, and speculative.

Finally, the commenter contends that differences in road systems under the alternatives would alter wildfire management. As detailed in the Draft RMP/EIS, the alternatives would result very small increases in the road network, the differences in the amount of new road construction among the alternatives would be negligible relative to the extent of the existing road network, and the BLM has no reasonable basis on which to forecast any difference among the alternatives in the amount of road decommissioning that the BLM would implement. As a result, there is no basis upon which the road system would differ under the alternatives in way that would measurably or meaningfully affect wildfire management.

In summary, the BLM analyzed in detail the full spectrum of alternatives that would accomplish the purpose of the action. The BLM has no apparent basis for an alternate approach to natural hazardous fuels reduction or wildfire management, and the commenter suggests none. Constructing a hypothetical variation in approach to natural hazardous fuels reduction or wildfire management would not improve the analysis of the effects of the alternatives and is not essential to a reasoned choice among the alternatives.

Proposed RMP

34. **Comment Summary:** Recommend fish stream Riparian Reserve be defined as 50 percent of the site potential tree height, with a suggested 70–105' width on each side. These are similar, but wider, to the Oregon Forest Practices Act buffers, which Watershed Research Cooperative science finds sufficiently protects fish and water. Recommend non-fish stream treed buffer be defined as 30 percent of Site Potential Tree height, with a suggested 30'−50' width each side. These are similar, but wider, to the OR Forest Practices Act buffers, which Watershed Research Cooperative science is finding sufficiently protects fish and water. Riparian Reserve buffer widths should be defined as slope distance. Active management of riparian areas should be encouraged to promote habitat diversity, productivity and function for the designated use—fish or domestic or irrigation. Small non-fish streams need only minimal buffering—primarily limited machine/log skid activity, wildlife tree location, two to four wildlife trees/acre along a stream, vegetation retention, hardwood and reforestation incentives, etc. Fish streams without salmon, steelhead or bull trout should receive a significantly narrower Riparian Reserve buffer.

    Response: Alternative C allocated the smallest Riparian Reserve of any of the alternatives. The analysis in the Draft RMP/EIS identified lower potential wood supply and more susceptibility to increased water temperatures than the other alternatives (USDI BLM 2015, pp. 224–228, 232–233). The Riparian Reserve widths and management recommended by the commenter would be smaller than the Riparian Reserve in Alternative C and would result in less potential wood supply to streams and a greater risk of stream temperature increases than Alternative C. Furthermore, the lack of a buffer on "small non-fish streams," as recommended by the commenter, would result in sediment delivery to streams that would not meet the purposes of contributing to the conservation and recovery of ESA-listed fish and providing clean water. The 2008 FEIS concluded that even a more substantial buffer on non-fish-bearing streams would pose a risk of increased fine sediment delivery to streams from harvest units (USDI BLM 2008, pp. 765). To allocate a Riparian Reserve as suggested by the commenter would not meet the purposes of contributing to the conservation and recovery of ESA-listed fish and providing clean water.

35. **Comment Summary:** The State requests that the management practices in the RMP align with the Statewide Riparian Management Policy that "sustain streamside and wetland riparian functions that support desirable water quality, native fish populations, and wildlife across the state." Those practices may include recruitment of large woody debris to the stream channel, maintaining shade, capturing fine sediment, thermal heterogeneity, and physical habitat complexity and connectivity.

    Response: The Proposed RMP would "sustain streamside and wetland riparian functions that support desirable water quality, native fish populations, and wildlife across the state." The analysis in the Proposed RMP/Final EIS concludes that the Proposed RMP would be as effective as or more

effective than all other alternatives, including the No Action alternative, in protecting water quality, fish habitat, and riparian habitat (see the Fisheries, Hydrology, and Wildlife sections of Chapter 3).

36. **Comment Summary:** The U.S. Fish and Wildlife Service supports the Riparian Reserve approach embodied in Alternative A because it provides significant protection for stream shading, sediment delivery and aquatic species, while providing more opportunities for restoration forestry projects than the design in the other alternatives, including Alternative D.

    Response: The Proposed RMP incorporates a Riparian Reserve approach similar to Alternative A for streams in Class I and Class II subwatersheds, as described in Chapter 2 of the Proposed RMP/Final EIS. The BLM developed this Riparian Reserve approach for the Proposed RMP together with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Environmental Protection Agency, as described in Chapter 4 of the Proposed RMP/Final EIS.

37. **Comment Summary:** The process for identifying and managing Key Watersheds should be refined. The existing network of Key Watersheds on BLM land does not align well with those areas which are the most important for listed fish, and also does not align well with source water watersheds (those that provide drinking water). Watersheds containing both high intrinsic potential (HIP) habitat for coho salmon or steelhead and critical habitat should receive specific management consideration by being managed to minimize risk to shade, temperature, and large wood inputs, and maximize certainty around achievable outcomes. This can be accomplished by a strategy built around the concepts included in Alternatives A or D. In watersheds that contain neither HIP nor critical habitat, intermittent and non-fish bearing streams should be managed to ensure the protection and maintenance of water quality; those streams in "non-key" watersheds should at a minimum receive protection consistent with the riparian strategy presented in Alternative B.

    Response: The BLM has addressed the concept of Key Watersheds in the Proposed RMP by varying the Riparian Reserve design and management based on the importance of the watershed to ESA-listed fish. The BLM developed this Riparian Reserve approach for the Proposed RMP together with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Environmental Protection Agency, as described in Chapter 4 of the Proposed RMP/Final EIS. Under the Proposed RMP, the Riparian Reserve design in subwatersheds that are important to ESA-listed fish is based on the management concepts in Alternatives A and D, as detailed in Chapter 2 of the Proposed RMP/Final EIS. The BLM based this delineation on critical habitat and high intrinsic potential streams, as the commenter recommends. Under the Proposed RMP, the Riparian Reserve design in watersheds that do not have critical habitat for fish or high intrinsic potential streams is based on the management concepts in Alternatives B and C for non-fish-bearing intermittent streams in watersheds, as the commenter recommends.

38. **Comment Summary:** The FEIS/Proposed RMP should clarify how watershed analysis will be brought forward in RMP implementation. Watershed-scale information is critical for decision-makers to establish the contextual basis for land use activities. In the BLM's equivalent of watershed analysis, the FEIS should include additional detail about how watershed information will be utilized and incorporated in the implementation of the RMP.

    Response: The BLM has addressed the concept of watershed analysis in **Appendix X** – Guidance for Use of the Completed RMPs in the discussion of watershed-scale information for implementation actions.

39. **Comment Summary:** The State recommends Best Management Practices related to roads specify that new and replacement stream crossing structures will be consistent with ODFW fish passage laws in the RMP.

    Response: The Proposed RMP includes management direction and Best Management Practices that ensure that new and replacement stream crossing structures would be consistent with both fish and aquatic organism passage criteria set forth by NMFS and Oregon State fish passage laws (**Appendix B** – Management Objectives and Direction, – Best Management Practices).

40. **Comment Summary:** The BLM should not conduct salvage logging after natural disturbances in Key Watersheds, Riparian Reserve, Late Successional Forest Reserve, and designated critical habitat of listed species. Scientific consensus on the inadvisability of post-disturbance logging largely emerged in the years just after FEMAT, hence it is incumbent on BLM to strengthen aquatic protections. It is incumbent on BLM to explain its rationale if it chooses to not implement such recommendations to improve watershed, water, and fish resource protection from post-fire logging.

    Response: The Proposed RMP prohibits salvage logging after disturbances in the Late-Successional Reserve and Riparian Reserve, except when necessary to protect public safety, or to keep roads and other infrastructure clear of debris (**Appendix B** – Management Objectives and Direction). This prohibition is consistent with the management objectives of maintaining and developing habitat for northern spotted owls and contributing to the conservation and recovery of ESA-listed fish species and their habitats and providing for conservation of Bureau Special Status fish and other Bureau Special Status riparian associated species, respectively. In the Harvest Land Base, including portions of designated critical habitat within the Harvest Land Base, the Proposed RMP directs timber salvage harvest after disturbance events, with restrictions and requirements, to recover economic value and to minimize commercial loss or deterioration of damaged trees. The management objectives for the Harvest Land Base focus on timber production, and specifically include recovering economic value from timber harvested after disturbance, such as a fire, windstorm, disease, or insect infestations. Therefore, it would be inconsistent with the management objectives to prohibit timber salvage in the Harvest Land Base, whether it is within a watershed with designated critical habitat or not. The BLM forecasted salvage harvest in the Harvest Land Base in the vegetation modeling. The BLM would implement such salvage harvest in the Harvest Land Base consistent with management direction regarding retention of live trees and snags and reforestation (**Appendix B** – Management Objectives and Direction). In addition, the Riparian Reserve management along all streams would ensure that salvage harvest in the Harvest Land Base, like green tree harvest in the Harvest Land Base, would have no effect on ESA-listed fish.

41. **Comment Summary:** All alternatives of the RMP should maintain and expand the Adaptive Management Area network. Building collaborative process into the mandates of the BLM will build trust, encourage transparency, and create more positive outcomes from local land management projects. More specifically, the Applegate Valley AMA should be maintained.

    Response: The BLM encourages and supports collaborative processes to support local land management projects. The Proposed RMP/Final EIS includes discussion of the adaptive management process and how the BLM will use adaptive management in the implementation of the RMP. However, the BLM does not believe that a separate land use allocation is needed to support such

collaborative processes. Nothing in the Proposed RMP would preclude the continued collaborative process that has been developed associated with the Applegate Valley Adaptive Management Area.

42. **Comment Summary:** The BLM should adopt an alternative that minimizes carbon emissions and timber harvest and maximizes forest carbon storage.

    Response: The BLM has developed the Proposed RMP to be the best approach to meeting all of the purposes of the action. Maximizing carbon storage and minimizing greenhouse gas emissions are not among the purposes of the action. As explained in the Draft RMP/EIS, the BLM has no specific legal or regulatory mandate or policy direction to manage BLM-administered lands for carbon storage. In addition, the BLM has various climate-related policies, but none provides an authority for the BLM to manage the decision area to minimize carbon emissions above the statutory mandate to manage for a sustained yield of timber (USDI BLM 2015, pp. 79–80).

    The BLM has broad authority to analyze and address through the planning process the causes of climate change, the effects of the alternatives on carbon storage and greenhouse gas emissions, and the effects of climate change combined with the effects of the alternatives. Nevertheless, this broad authority does not equate to a specific mandate to minimize greenhouse gas emissions or maximize carbon storage. Furthermore, the BLM cannot stretch its mandate to provide a sustained yield of timber to encompass maximizing carbon storage or minimizing greenhouse gas emissions.

    The Draft RMP/EIS analyzed the effects of the alternatives on carbon storage and greenhouse gas emissions. That analysis demonstrated that there is a general trade-off between the level of sustained-yield timber production and the level of carbon storage and that the level of sustained-yield timber production and associated prescribed burning generally would reflect the level of greenhouse gas emissions. As such, the management approach that would maximize carbon storage and minimize greenhouse gas emissions would be the No Timber Harvest reference analysis, which would not be a reasonable alternative (USDI BLM 2015, pp. 132–140). To the extent that carbon storage represents a trade-off with sustained-yield timber production, managing for carbon storage would frustrate the BLM's ability to provide for a sustained yield of timber.

43. **Comment Summary:** The FEIS should map connectivity corridors, climate refugia, and include these areas in Wild and Scenic and Wilderness Study Area proposals to build a robust climate conservation strategy.

    Response: It would not be appropriate to include connectivity corridors and climate refugia in Wild and Scenic River and Wilderness Study Area proposals, as the commenter recommends.

    As explained in the Draft RMP/EIS, in order to be eligible for inclusion into the National Wild and Scenic River System, a river segment must be free flowing and contain at least one river-related value considered outstandingly remarkable. Under the 1995 RMPs, the BLM found 51 river segments eligible. The BLM further evaluated each eligible river segment to determine whether it is suitable for inclusion into the National System. The suitability analysis provides the basis for determining which rivers to recommend to Congress as potential additions to the National System. The BLM has identified six segments that the BLM believes meet the suitability criteria for inclusion in the National Wild and Scenic River System (USDI BLM 2015, pp. 847–851). However, connectivity corridors and climate refugia are not among the criteria for establishing suitability criteria for inclusion in the National Wild and Scenic River System.

As explained in the Draft RMP/EIS, the BLM's authority to conduct wilderness reviews, including the establishment of new Wilderness Study Areas, expired on October 21, 1993, pursuant to Section 603 of the FLPMA. The BLM retained the authority under Sections 201 and 202 of the FLPMA to inventory wilderness characteristics and to consider such information during land use planning (USDI BLM 2015, p. 371). However, connectivity corridors and climate refugia are not among the criteria for evaluating wilderness characteristics.

Effects Analysis

44. Comment Summary: The 50-year time frame that all models are based on is unrealistic because of so many other variables that could be happening in 50 years to change all the circumstances.

Response: The time frames for the analysis of effects vary by issue. However, the BLM did analyze many issues over a 50-year time frame. This time frame for analysis is necessary to address the long-term effects of the agency action, which is required by the Council on Environmental Quality regulations for implementing the National Environmental Policy Act (40 CFR 1502.16). The BLM NEPA Handbook instructs that the time frames for analysis should be based on the duration of the direct and indirect effects of the proposed action and alternatives, rather than the duration of the action itself (USDI BLM 2008, p. 58). In addition, analyzing effects over this long time frame helps illuminate differences among the effects of the alternatives that may not be apparent over shorter time frames.

45. Comment Summary: The BLM has chosen to bypass or avoid independent peer review of the scientific information contained in the DEIS. All models and scientific assessments contained in the DEIS should undergo independent scientific peer review.

Response: There is no requirement under NEPA or the BLM planning regulations for an agency to conduct peer review on an RMP/EIS. In 2004, the Office of Management and Budget (OMB) issued a memorandum requiring peer review for government science documents under the authority of the Information Quality Act. That memorandum gave examples of the types of science assessments that would require peer review, including "state-of-science reports; technology assessments; weight-of-evidence analyses; meta-analyses; health, safety, or ecological risk assessments; toxicological characterizations of substances; integrated assessment models; hazard determinations; or exposure assessments" (Office of Management and Budget 2004, p. 11). An RMP/EIS does not constitute a government science document for the purposes of that OMB memorandum.

The BLM NEPA Handbook explains,

> "Analytical documents to support Federal agency decision-making include EISs and EAs, but neither are considered publications of scientific research subject to peer review. You may choose to have your NEPA analysis reviewed by members of the scientific community as part of public review of the document. Such review may be desirable to improve the quality of the analysis or share information; this does not constitute formal peer-review" (BLM 2008, p. 55).

Although there is no requirement for peer review of an RMP/EIS, the BLM did elect to have portions of the Draft RMP/EIS reviewed by members of the scientific community. The Proposed RMP/Final EIS has added description to **Appendix T** – Northern Spotted Owl that details the review that the BLM conducted on the northern spotted owl analytical methodology.

46. **Comment Summary:** RMP uses the wrong baseline in annual timber harvest in Alternatives, leading to false results. The Socioeconomic section's key points state: "The annual harvest value of timber, compared to $23 million to 2012, would increase under all alternatives." (DRMP/EIS, page 472.) The baseline for comparison under NEPA is the current plan, which in the DRMP/EIS is the "No Action Alternative as written." Using the correct baseline, only Alternative C would have an increase in value of the timber. The current implementation, as reflected in the 2012 baseline, represents a substantial departure from the current plan and reflects and unsustainable harvest of relatively low value timber with high associated logging costs.

    Response: The No Action alternative presents the effects of implementing the 1995 RMPs as written. The Draft RMP/EIS analyzes the effects of the No Action alternative on the annual harvest value of timber. The analysis in the Draft RMP/EIS compared the effects of all alternatives to the current condition of the resource at issue—the annual harvest value of timber—and so therefore the analysis reflects all past timber harvest that occurred under the existing RMP. The most recent data available when the BLM was preparing the Draft RMP/EIS was for 2012. The analysis in the Draft RMP/EIS allows for comparison of the effects of the alternatives, including the No Action alternative relative to the conditions in 2012 and comparison of the effects of the alternatives, including the No Action alternative, relative to each other in the future. As evidenced by the commenter's points, the commenter was able to discern accurately from the analysis in the Draft RMP/EIS the relative changes in value among the alternatives and compare the changes to the current condition. It is not clear what "false results" the commenter perceives or what information they believe the Draft RMP/EIS omitted.

47. **Comment Summary:** The Oregon Department of Forestry is currently conducting an analysis of Riparian Management Areas for private forest management activities under Oregon's Forest Practices Act to inform rule making by the Oregon Board of Forestry (BOF). Their decisions, which will focus on the watershed effects of contemporary timber harvest (active management) should be considered and where appropriate incorporated into the RMP/EIS for Western Oregon.

    Response: On November 5, 2015, the Oregon Board of Forestry voted to develop administrative rules that create a 60-foot buffer on small fish-bearing streams and an 80-foot buffer on medium-sized fish-bearing streams. These rules do not apply to BLM-administered lands. As of the preparation of the Proposed RMP/Final EIS, the State of Oregon has not yet developed these administrative rules. In the identification of Alternative B as the preferred alternative, the BLM seeks to develop a Proposed RMP that would reduce the risk of adverse effects to ESA-listed fish and water quality compared to Alternative B. Given that the Riparian Reserve width on all fish-bearing streams under Alternative B would be one site-potential tree height (which generally varies from 140 to 240 feet width in the planning area), and that the BLM seeks to reduce the risk of adverse effects to ESA-listed fish and water quality compared to Alternative B, an alternative that would provide a substantially smaller Riparian Reserve than Alternative B would not be reasonable.

48. **Comment Summary:** The BLM has a history of deliberately circumventing the Northwest Forest Plan and Aquatic Conservation Strategy. The Aquatic Conservation Strategy is not currently being followed and that the DEIS "action" alternatives will never be followed. The cumulative impacts of continuing to ignore these legally required, fundamental aquatic ecosystem protections must be fully evaluated in the FEIS.

Response: The BLM has monitored implementation of the 1995 RMPs, consistent with the monitoring plans included in the 1995 RMPs. The BLM has documented this implementation annually through the individual district Annual Program Summaries (USDI BLM 2015, p. 21). The BLM implementation monitoring has found very high compliance of individual projects with the management direction of the RMP. This detailed record of implementation monitoring contradicts the commenter's assertion that the BLM has "a history of deliberatively circumventing" the RMP. Regardless of whether BLM actions have deliberately circumvented the RMP as the commenter asserts or have complied with the 1995 RMPs as the BLM asserts, the effects of those actions are included in the environmental baseline used in the effects analysis (USDI BLM 2015, pp. 99, 987–999).

The BLM has conducted periodic RMP evaluations (USDI BLM 2012). Plan evaluations review the RMP to determine whether the BLM is implementing the plan decisions as expected and the associated NEPA analyses are still valid. The most recent plan evaluation concluded that the current forest management approach deviates from the RMP assumptions in the extent of timber harvest compared to RMP assumptions used to determine the declared ASQ, notably reduced levels of regeneration harvest. The plan evaluation did not find that this deviation is resultant from the BLM taking any actions that do not comply with the RMP or "deliberatively circumvent" the RMP.

The commenter asserts that the BLM will never follow any of the action alternatives. The BLM analyzes alternatives in an RMP/EIS based on effects that are reasonably foreseeable (40 CFR 1508.8(b)) and assumes that implementation of actions in compliance with an approved RMP are reasonably foreseeable future actions. Reasonably foreseeable future actions are those for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends (BLM 2008, p. 59). The commenter provides no foundation for their assertion that the BLM will never follow any of the action alternatives. Moreover, if the commenter's assertion were true, it would be impossible to predict future implementation of the RMP. The commenter does not explain how the BLM could forecast the effects of the BLM not following the action alternatives in future implementation.

49. Comment Summary: BLM's large-scale re-formulation of the area and location of forest reserves calls for a fundamental re-analysis of the adequacy of the DEIS alternatives to support the habitat conditions necessary for recovery of listed fish and conservation of other values fish and wildlife species [sic]. The DEIS lacks such an analysis, ignoring without explanation that the FEMAT in 1993 provided an exemplary template for how to conduct such analyses in a defensible way using best available scientific information to inform planning design and NEPA analysis of large-scale forest management programs.

Response: The FEMAT Report provided the information available at the time on the effects of various alternatives on aquatic and riparian species, which formed the basis for the analysis in the supplemental EIS for the Northwest Forest Plan. However, the information in the FEMAT Report was limited to generalized statements across a very large and diverse assessment area and the use of expert panels. In contrast, the Draft RMP/EIS contains detailed information on conditions within the much smaller planning area and conducts quantified modeling and analysis specific to the alternatives in the Draft RMP/EIS. The BLM based the analysis is the Draft RMP/EIS on detailed information that was not available when the Northwest Forest Plan was approved and presents objective, reproducible analytical conclusions. The analytical methodology and data in the Draft RMP/EIS is sound.

50. Comment Summary: It appears upon analysis that the BLM applies the wrong hierarchy of Standards and Guidelines during their implementation of their RMPs (i.e., the mapping/display hierarchy on ROD page A5, instead of the correct hierarchy of S&G application on ROD page C-1) for the various land allocations. In short, the BLM is admitting to the public that they generally treat the Riparian Reserve in LSR as full on management zones. This issue relates directly to the failure to adequately describe and analyze the No Action alternative. In the case of the BLM RMP DEIS, the No Action alternative should be all of the following: what the 1995 RMPs say (as written), what they legally require (as amended by NWFP and ACS), and how the BLM actually implements them, particularly within the designated Riparian Reserve and LSR. Unlike what BLM asserts these are not "no holds barred" management zones. Using the correct hierarchy of S&Gs the Riparian Reserve protections add to LSR protections. Riparian Reserve standards are more precautionary than LSR standards with respect to aquatic conservation.

Response: The commenter misunderstands the data in the Draft RMP/EIS. The presentation of the acreage by land use allocation for the No Action alternative by two different hierarchies only addresses the data question of how to account for those areas that are allocated to both Late-Successional Reserve and Riparian Reserve under the No Action alternative. As explained in the Draft RMP/EIS, the data presented in the Northwest Forest Plan and the 1995 RMP counted such acres as Late-Successional Reserve, and that data is displayed in the Draft RMP/EIS (USDI BLM 2015, pp. 28–32). The Draft RMP/EIS further displayed the acreage data for the No Action alternative if such acres are counted as Riparian Reserve, to facilitate direct comparison with the acreage by allocation of the action alternatives (USDI BLM 2015, pp. 32–33). This display of acreage data does not make any statement relevant to the management direction (i.e., 'standards and guidelines') or implementation practices in the areas that are allocated to both Late-Successional Reserve and Riparian Reserve under the No Action alternative. The Draft RMP/EIS acknowledges that in these areas of overlapping allocations, the management objectives and management direction of both the Late-Successional Reserve and Riparian Reserve apply.

The BLM concurs with the commenter that the No Action alternative should be "what the 1995 RMPs say (as written)." However, the commenter's statement that the No Action alternative should also be "what they legally require (as amended by the NWFP and ACS)" is mistaken. The Northwest Forest Plan did not amend the 1995 RMPs. The BLM developed the1995 RMPs to be consistent with the already-adopted Northwest Forest Plan. Thus, there is no difference between the commenter's characterizations of "what the 1995 RMPs say" and "what they legally require." The commenter further asserts that the No Action alternative should be "how the BLM actually implements them." In the case of management within the overlapping acres of Late-Successional Reserve and Riparian Reserve, the BLM contends that this is the same as "what the 1995 RMPs say," based on the implementation monitoring documented in district Annual Program Summaries. However, there are other aspects of RMP implementation—notably timber harvest in the Matrix—in which "what the1995 RMPs say" differs from "how the BLM actually implements them." The BLM documented this difference in the most recent plan evaluation (USDI BLM 2012). The Draft RMP/EIS also describes this difference and explains why the No Action alternative in this RMP revision is the 1995 RMPs as written, rather than attempting to project the current implementation practices (USDI BLM 2015, pp. 77–79).

The NEPA and Planning Processes

51. Comment Summary: The purpose of the "Affected Environment" section in NEPA is to describe all issues and resource concerns that occur presently on the landscape, so as not to miss any type of

impact as well as to inform cumulative impacts analysis. The BLM must go back and describe all the resources that are affected by the RMP revisions in a correctly formulated "Affected Environment" section, before selecting "methods" for analysis. Then the BLM must evaluate all direct, indirect, and cumulative impacts to the affected resources. A perfect example of this is Key Watersheds. The Affected Environment includes a system of Tier 1 and Tier 2 Key Watersheds. The Affected Environment section should explain this fact as part of the baseline environmental and resource conditions, and present why this is so.

Response: The commenter is mistaken about the nature of the description of the Affected Environment in a NEPA analysis. According to CEQ regulations,

> *"The environmental impact statement shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration. The descriptions shall be no longer than is necessary to understand the effects of the alternatives. Data and analyses in a statement shall be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced"* (40 CFR 1502.15).

The BLM NEPA Handbook further explains,

> *"The affected environment section succinctly describes the existing condition and trend of issue-related elements of the human environment that may be affected by implementing the proposed action or an alternative. ... The affected environment section of the environmental analysis is defined and limited by the identified issues"* (USDI BLM 2008, p. 53).

The purpose of the affected environment section is not to describe the condition and trend of all resources, but rather to describe the condition and trend of resources related to the identified issues.

The Draft RMP/EIS explained that the BLM conducted scoping to help identify issues and then presented the preliminary issues in the Planning Criteria for public review and comment (USDI BLM 2015, pp. 863–864). The BLM has used the results of this scoping and public involvement to define the issues for analysis and has structured the analysis in the Draft RMP/EIS by these defined issues, consistent with CEQ regulations and the BLM NEPA Handbook.

The commenter's assertion that the Affected Environment includes Key Watersheds demonstrates the commenter's error on this matter. The Key Watersheds are a feature of the 1995 RMPs (i.e., the No Action alternative) and the Draft RMP/EIS describes Key Watersheds as such (USDI BLM 2015, pp. 22–23, 27–28). The Affected Environment describes the existing condition and trend of resources. The resources at issue are various elements of the environment, such as water temperature, water flows, sediment routing, and fish habitat. The Key Watersheds identified in the No Action alternative, in and of themselves, do not constitute a resource needing analysis. The Draft RMP/EIS described the current condition and trend of these resources in all watersheds in the decision area, including the Key Watersheds identified in the No Action alternative (USDI BLM 2015, pp. 217–235, 286–320). The analysis of the No Action alternative included the management of Key Watersheds, and, to the extent that there are any differences in environmental effects from the designation of Key Watersheds, such differences are reflected in the analysis of the No Action alternative. The Proposed RMP carries forward the concept of Key Watersheds from the No Action alternative, in that it varies riparian management based on the importance of the subwatershed to the conservation and recovery of ESA-listed fish. Similarly, the analysis of the Proposed RMP in the Proposed RMP/Final EIS also reflects the differences in environmental effects from the designation of the three subwatershed classes, and reflects the difference in environmental effects of changing the Key Watershed designations in the No Action alternative to the three subwatershed classes of the Proposed RMP (see the Fisheries and Hydrology sections of Chapter 1).

52. **Comment Summary:** The BLM should have a discrete cumulative effects section, outlining effects of each alternative pursuant to NEPA. The BLM does not provide detail or clear rationale on its analysis. Its analysis of reasonably foreseeable future effects is extremely narrow. The BLM postpones its analysis to other district or site-specific plans. The BLM deflects its duty to analyze cumulative effects in the current RMP/DEIS, stating that "[t]here are other broad-scale analyses currently underway that the BLM considers as reasonably foreseeable actions for analyzing cumulative effects" (DEIS, p. 95).

Response: The CEQ regulations require that an EIS analyzes the environmental effects of the alternatives and defines effects as including direct and indirect effects (40 CFR 1502.16, 1508.8). The CEQ regulations also define cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). The CEQ regulations do not identify any format requirements for cumulative effects analysis and do not require a "discrete cumulative effects section." The BLM NEPA Handbook lays out the steps in cumulative effects analysis but explains that there is not a required format or presentation of cumulative effects (BLM 2008, pp. 57–61).

The Draft RMP/EIS explained that there is not a discrete and separate section labeled as cumulative effects. The discussion of effects on each resource incorporates the effects of past actions, and describes other present actions and reasonably foreseeable actions to provide context in which the BLM examined incremental effects, thus revealing the cumulative effects of the alternatives (USDI BLM 2015, pp. 93–94). It would not be helpful to provide a separate section labeled as cumulative effects in this analysis, because all of the effects of the RMP are cumulative in nature. The effects of the RMP on any resource are generally indirect effects that arise from the implementation actions that the BLM would conduct in conformance with the RMP. The analysis of effects in the Draft RMP/EIS does not address the effects of an individual future implementation action, but the cumulative effects of implementation of entire programs of actions (i.e., a collection of reasonably foreseeable future actions) under each alternative. The analysis addresses the cumulative effect of implementing a combination of multiple programs under each alternative. The analysis summarizes the effects of past actions in creating the current condition and trend of resources, as explained in the Draft RMP/EIS. The analysis incorporates the effects of reasonably foreseeable future actions by others, as explained in the Draft RMP/EIS. For specific issues, the analysis in the Draft RMP/EIS then evaluated how these effects combined to form analytical conclusions about the cumulative effects.

For example, the analysis of marbled murrelet nesting habitat—

- Summarized the effects of past actions in creating the current amounts of nesting habitat;
- Analyzed the combined effects of all BLM programs under the RMP that would remove nesting habitat over time;
- Analyzed the effects of reasonably foreseeable future actions by others that would remove nesting habitat over time;
- Analyzed the effects of forest development on BLM-administered lands in creating nesting habitat over time; and
- Analyzed the effects of forest development on other lands in creating nesting habitat over time.

The analysis combined all of these effects to describe the amount of nesting habitat under each alternative, over time, as a result of all actions that would affect nesting habitat, on BLM-administered lands and across all lands. The BLM provided reasoned conclusions about the cumulative effect of the alternatives on marbled murrelet nesting habitat (USDI BLM 2015, pp. 724–730). This constitutes a complete cumulative effects analysis, consistent with CEQ regulations and

the BLM NEPA Handbook. To create a discrete and separate section labeled as cumulative effects within this analysis would provide no additional information and would not improve the quality of the analysis.

The commenter mischaracterizes the statement on page 95 of the Draft RMP/EIS and provides an incomplete quotation. The full passage in the Draft RMP/EIS reads, "There are other broad-scale analyses currently underway that the BLM considers as reasonably foreseeable actions for analyzing cumulative effects, including the U.S. Forest Service revision of the Okanagan-Wenatchee Forest Plans and the Jordan Cove Energy and Pacific Connector Pipeline Project." The Draft RMP/EIS proceeds to provide lengthy specific discussions of these two reasonably foreseeable future actions and how they are addressed in the Draft RMP/EIS (USDI BLM 2015, pp. 95–96). This passage does not postpone analysis to other districts or site-specific plans, as the commenter alleges, but addresses the cumulative effects of these other actions to the extent they are reasonably foreseeable. This passage specifically identifies which other broad-scale analyses are currently underway that the BLM considers as reasonably foreseeable actions, and specifically addresses them in this Draft RMP/EIS.

53. **Comment Summary:** A monitoring plan should be included as an appendix to the FEIS/ROD. The monitoring plan should establish how watershed-scale information/watershed analysis will inform monitoring priorities; lay out monitoring questions that will be used to inform the adaptive management process; and discuss how localized monitoring information will be compiled and placed in a broader, regional context.

    Response: The Proposed RMP/Final EIS includes a monitoring plan for the Proposed RMP in **Appendix V** – Monitoring Plan for the Proposed RMPs. That appendix includes explanation of the RMP monitoring in the context of other, broader monitoring efforts. In addition, **Appendix X** – Guidance for Use of the Completed RMPs includes discussion about how the BLM will consider and incorporate watershed-scale information and describes the adaptive management process.

54. **Comment Summary:** In crafting this RMP, the BLM has failed to coordinate with Josephine County.

    Response: The FLPMA requires the BLM to coordinate with local governments. Under the FLPMA, the BLM is required to assure that consideration is given to those state, local, and tribal plans that are germane in the development of land use plans for public lands, assist in resolving to the extent practical, inconsistencies between Federal and non-Federal Government plans, and shall provide for meaningful public involvement of state and local government officials. The FLPMA further states that land use plans shall be consistent with state and local plans to the maximum extent while remaining consistent with Federal law and the purpose of the FLPMA.

    The BLM reviewed the action alternatives in the Draft RMP/EIS for consistency with Josephine County's Natural Resource Coordination Plan, dated February 18, 2015, and did not find any major apparent inconsistencies. The comment does not identify any specific areas where the action alternatives in the Draft RMP/EIS would be inconsistent with Josephine County plans and policies including the Natural Resource Coordination Plan.

    At the beginning of the RMP revision process, the BLM invited all counties within the planning area to be cooperating agencies in the RMP revision, consistent with 40 CFR 1501.6. Josephine County declined to be a cooperating agency. On April 28, 2015, the BLM again invited Josephine County to be a cooperating agency, but Josephine County again elected not to become a cooperating agency.

Sixteen counties within the planning area are cooperating agencies in the RMP revision (USDI BLM 2015, pp. 866–867).

55. **Comment Summary:** The Deer Creek Valley Natural Resources Conservation Association requested that they be included on the interdisciplinary team for the RMP, but was denied and told by the BLM that "we need to be fair to all stakeholders by providing information and the opportunity for input to all non-governmental entities at the same time." However, the fire and fuels analysis uses input from The Nature Conservancy, which is a non-governmental entity.

    Response: The Nature Conservancy conducted analysis under contract to the BLM for the Fire and Fuels analysis, as explained in the Draft RMP/EIS (USDI BLM 2015, pp. 177, 1113–1114), because of their specialized knowledge and expertise, consistent with 40 CFR 1506.5(c). The Proposed RMP/Final EIS has added discussion to provide more detail about this contracted work. The Nature Conservancy was not on the Interdisciplinary Team and had no role in the analysis other than the specified analysis of landscape resilience in the Fire and Fuels section. The commenter, Mary Camp, representing the Deer Creek Valley Natural Resources Conservation Association requested that a team from the Deer Creek Valley Natural Resources Conservation Association be included on the Interdisciplinary Team. The BLM declined this request, informing her that including members of the Deer Creek Valley Natural Resources Conservation Association on the Interdisciplinary Team would not be fair to other stakeholders and could be inconsistent with the Federal Advisory Committee Act. The only members of the Interdisciplinary Team that are not BLM staff are those contractors described in the Draft RMP/EIS (USDI BLM 2015 pp. 177, 875).

56. **Comment Summary:** The Draft EIS has little to say about the process that would lead the agency to decision-making regarding project design and implementation (placement) beyond generalized identification of expected yield. There is little direction on "where to go, when, and why." The BLM should consider incorporating a spatially explicit, prioritized treatment landscape into future agency planning across the Medford District BLM. Such an effort could better identify restoration need, maximize acres treated as a primarily goal (as opposed to volume generated) and work to strategically achieve key goals, including the reduced risk of fire to homes in the Fuels Management Emphasis Area.

    Response: The management direction for the action alternatives includes abundant management direction regarding project design and implementation "beyond generalized identification of expected yield." For example, all action alternatives include management direction for Riparian Reserve that includes delineation of an inner zone, in which certain activities are prohibited, and an outer zone, in which specific restoration activities, such as stand thinning and fuels treatments, are directed for specific purposes. For example, all action alternatives include management direction for post-fire salvage harvest, which prohibits salvage harvest in some land use allocations and directs it in other land use allocations for specific purposes (USDI BLM 2015, pp. Appendix B). However, the action alternatives appropriately do not include a spatially explicit, prioritized plan for fuels treatments. Such implementation decisions depend upon site- and project-specific conditions that are best assessed by the BLM in project planning and design, rather than in the RMP revision. The Proposed RMP/Final EIS has added explanation of how the BLM will implement the approved RMPs (**Appendix X** – Guidance for the Use of the Completed RMPs).

Air Quality

57. Comment Summary: RMP does not discuss techniques for reducing air quality impacts, such as use of forest residues in biodigestion, after disclosing that air quality will decrease under all alternatives.

Response: As explained in the Draft RMP/EIS, 'air quality' has a specific regulatory meaning tied to Smoke Sensitive Receptor Areas (SSRAs), air quality non-attainment and maintenance areas, and mandatory Class I areas. The Draft RMP/EIS disclosed an increased risk of adverse effects on air quality (USDI BLM 2015, pp. 119–120), but that does not mean that prescribed burning will result in degradation of overall air quality. The intent of the Oregon Smoke Management Plan is to avoid adverse impacts to SSRAs and mandatory Class I areas. Compliance with the Oregon Smoke Management Plan would adequately manage those risks prohibiting smoke intrusions into SSRAs.

The BLM has encouraged the use of harvest residues for wood energy or other uses since 2001 as part of the National Fire Plan. While biodigestion is not currently available, the BLM makes biomass available for utilization as described in the Sustainable Energy section of Chapter 3, and, when economically feasible, the biomass may be utilized at one of the cogeneration facilities in the planning area. However, the Draft RMP/EIS explained that such use of biomass as an energy source remains low to non-existent due to the low value of the product, high transportation costs, and lack of facilities that would use the material (USDI BLM 2015, pp. 629–630). Specifically, the use of biodigestion on a scale that could affect the air quality analysis is not reasonably foreseeable at this time. One company announced plans to construct a cellulosic ethanol plant in Longview, Washington, but later cancelled these plans. In June 2015, the State of Oregon announced grant opportunities to explore the construction of new biomass heating, co-generation, manufacturing, or other facilities that would use woody biomass from forest and fuels management projects, but whether any new facilities will result from this grant opportunity and that would service any part of western Oregon is unknown.

58. Comment Summary: The DEIS fails to address the predictable increase in wildfire from the various types of reserves. The DEIS fails to analyze and display the environmental and economic consequences of smoke pollution for wildfires and prescribed burning. Please refer to the January/February 2006 Journal of Forestry article titled, 'Investment in Fuel Removals to Avoid Forest Fires Result in Substantial Benefits' by C.L. Mason *et al*.

Response: The BLM disagrees that it is predictable that wildfires and wildfire emissions would increase as a result of establishing the various reserves. The Draft RMP/EIS explained that the BLM would conduct thinning in most of the reserves to reduce the risk of uncharacteristic wildfires and reduce potential wildfire spread and intensity under all action alternatives (USDI BLM 2015, pp. 914–916). The BLM has reviewed Mason *et al*. (2006) and found it to be of limited applicability to the concern raised. Both the scientific literature and experience on recent wildfires around the western United States have established the economic and ecological values of thinning to reduce crown fire risks. While the scientific literature demonstrates the increased potential for larger and more severe wildfires in reserves due to changes in the fuelbed characteristics, whether that potential would be realized in the BLM-administered lands in the planning area is not known, since realizing that potential depends on ignitions, which are inherently uncertain. The literature also is clear that landscape context matters; some areas would remain at lower risk due to the lack of ignitions and alterations in surrounding fuelbeds. The Draft RMP/EIS disclosed the potential for further degradation in air quality arising from changes in fire season length and fire severity resulting from climate change (USDI BLM 2015, p. 122).

The Draft RMP/EIS analyzed the effects of wildfires only to the extent that wildfire would have a cumulative effect together with the effects of the alternatives. Wildfire is not an effect of the BLM action. The Draft RMP/EIS displayed the expected change in emissions from prescribed fire and wildfire in combination (USDI BLM 2015, pp. 118, 120). The Draft RMP/EIS analyzed smoke from wildfires not as an effect of the alternatives, but as a reasonably foreseeable occurrence as part of the cumulative effects analysis to provide context. The Proposed RMP/Final EIS has altered the analysis to display the expected emissions from wildfire separately from prescribed fire to distinguish the effects of the alternatives from other effects. The Draft RMP/EIS disclosed the potential for adverse impacts to Smoke Sensitive Receptor Areas, air quality non-attainment and maintenance areas, and to mandatory Class I areas from prescribed burning, including a discussion of wildfire smoke (USDI BLM 2015, pp. 119–122).

The Draft RMP/EIS discussed the potential indirect environmental effects of emissions under the alternatives, considered in the context of the potential indirect environmental effects of emissions from wildfires (USDI BLM 2015, pp. 105–122). The commenter does not identify any indirect environmental effects of prescribed burning that the Draft RMP/EIS did not analyze. To ascribe indirect economic effects from prescribed burning would be speculative; any economic impact would depend on a large number of variables, such as timing and duration of the smoke, locations affected, and specific economic sectors potentially adversely affected. While the health effects of smoke are well documented in the scientific literature, the economic impacts are not. The commenter does not offer any information that would allow the BLM to analyze the indirect economic effect of emissions from prescribed burning.

Areas of Critical Environmental Concern

59. Comment Summary: The BLM should revise the EIS to include designation of the Hoxie Creek potential ACEC in all alternatives because it has been found to meet ACEC eligibility criteria, and it requires special management attention to protect its relevant and important values. The Hoxie Creek potential ACEC contains old-growth forest that must be maintained to contribute to northern spotted owl recovery, has unique ecological and recreational values needing protection, and is unsuitable for timber production due to tree regeneration problems.

Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained yield forest management in areas allocated to timber production on O&C lands.

Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. The Hoxie Creek potential ACEC continues to meet the relevance and importance criteria; however, it occurs within the Harvest Land Base land use allocation under Alternatives B and C. The special management attention required to maintain the relevant and important values conflicts with the management direction of the Harvest Land Base, which is designed to meet the purpose and need described in Chapter 1 for managing O&C lands. Under Alternatives A and D, and the Proposed RMP, the Hoxie Creek potential ACEC occurs within the Late-Successional Reserve land use allocation, and the special management attention required to maintain the relevant and important values are already provided for by the management direction for the Late-Successional Reserve.

Because of these reasons, the BLM would not designate Hoxie Creek potential ACEC as an ACEC under any alternative.

The BLM may manage areas identified as unsuitable for sustained-yield timber production (e.g., areas or soil conditions for which regeneration would be difficult) through the Timber Production Capability Classification (TPCC) system for other uses, if those uses are compatible with the reason for which the BLM has reserved these lands (as identified by the TPCC codes). The BLM will periodically add or remove areas to those areas reserved through updates to the TPCC system, when examinations indicate the change to be appropriate. BLM describes the TPCC system and its use in the Woodstock vegetation model in **Appendix C** – Vegetation Modeling. Neither site-specific evaluation by BLM staff nor the TPCC codes for the Hoxie Creek potential ACEC used in the Woodstock model have identified stand growth concerns warranting Hoxie Creek stands' inclusion in a TPCC district-designated reserve.

Analysis of northern spotted owls, forest management, recreation, and wildlife all considered the lands within the potential Hoxie Creek ACEC for management by the underlying land use allocation by each alternative and determined impact to these resources accordingly.

60. Comment Summary: The BLM should revise the EIS to include designation of the Upper Klamath and Upper Klamath Addition potential ACECs in all alternatives because BLM has determined they meet ACEC eligibility criteria, and require special management attention to protect their relevant and important values. The Upper Klamath and Upper Klamath Addition potential ACECs support fisheries, endangered fish, water quality, recreation, unique cultural and historic values needing protection by way of ACEC designation.

Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained-yield forest management in areas allocated to timber production on O&C lands.

The Upper Klamath and Upper Klamath Addition potential ACECs has been found to contain relevant and important values for historical, cultural, and scenic resources; fish and wildlife resources; and unique ecological communities.

Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. The Upper Klamath and Upper Klamath Addition potential ACECs continue to meet the relevance and importance criteria; however, varying portions of these ACECs overlap the O&C Harvest Land Base under the alternatives. The majority of the potential ACECs occur within the Harvest Land Base land use allocation under Alternatives B and C. The special management attention required to maintain the relevant and important values conflict with the management direction of the Harvest Land Base, which is designed to meet the purpose and need described in Chapter 1 for managing the O&C lands. The portions of these potential ACECs outside of the Harvest Land Base under these alternatives do not meet the criteria for ACEC designation. The BLM would not designate these potential ACECs under Alternatives B and C.

Under Alternatives A and D, and the Proposed RMP, the vast majority of the Upper Klamath and Upper Klamath Addition potential ACECs occur outside of the Harvest Land Base. The BLM revised the boundaries of the Upper Klamath and Upper Klamath Addition potential ACECs for these alternatives to exclude areas in the Harvest Land Base. The revised boundaries are available for review on the RMP's online Interactive Map. With these boundary revisions, the special management attention required for the revised Upper Klamath and Upper Klamath Addition potential ACECs would not conflict with managing O&C lands under Alternatives A and D, and the Proposed RMP. Therefore, the BLM would designate these potential ACECs under these alternatives.

Analysis of fisheries, endangered fish, water quality, recreation, and cultural resources all considered the lands within the Upper Klamath and Upper Klamath Addition potential ACECs for management by ACEC designation or by the underlying land use allocations by each alternative, and determined impact to these resources accordingly. The BLM incorporated protection for fisheries and water quality into the Riparian Reserve land use allocation and associated management direction. The Upper Klamath River Wild and Scenic River and the associated recreation management area provide for recreation opportunities in the upper Klamath River.

61. Comment Summary: The BLM should revise the EIS to include protections of municipal water supplies and habitat for salmonids and lamprey from mining projects proposed in and near the North Fork Chetco, North Fork Hunter Creek, and Hunter Creek Bog potential ACECs. The BLM should require coordination with the U.S. Forest Service to protect these values from mining projects proposed next to the Hunter Creek Bog potential ACEC.

Response: The BLM would designate the North Fork Chetco, North Fork Hunter Creek, and Hunter Creek Bog potential ACECs under all of the action alternatives, including the Proposed RMP. **Table F-2** in **Appendix F** – Areas of Critical Environmental Concern provides information about the special management direction that BLM would apply to these areas upon designation. These areas would be open to leasable mineral entry with no surface occupancy, closed to salable mineral entry, and the BLM would recommend these areas to petition for withdrawal from locatable mineral entry. As such, mining projects within these ACECs would be required to adhere to these special management requirements under all action alternatives.

In addition to the minerals management provided through special management for the ACECs, **Appendix B** – Management Objectives and Direction provides minerals management direction on all lands. Under the action alternatives, including the Proposed RMP, the BLM would manage lands within, adjacent to, and upstream from potential ACECs consistent with management direction in **Appendix B** – Management Objectives and Direction. This management direction addresses notice-level mining proposals and Plans of Operation located within lands or waters known to contain proposed or ESA-listed threatened or endangered species or their proposed or designated critical habitat.

Consistent with NEPA requirements, BLM would coordinate with adjacent land managers, including the U.S. Forest Service, on an as needed basis during site-specific project planning and during RMP implementation.

62. Comment Summary: The BLM should revise the EIS to expand the Wassen Creek potential ACEC to protect potential wilderness.

Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained-yield forest management in areas allocated to timber production on O&C lands. In preparation for the plan revisions, the BLM reviewed the Wassen Creek potential ACEC and, through this review, refined the boundaries to exclude areas that do not contain relevant and important values and incorporate other areas that do. Coincidentally, the revised Wassen Creek potential ACEC boundary now includes more inventoried lands with wilderness characteristics.

Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. Relevant and important values for the Wassen Creek potential ACEC include scenic, fish and wildlife, and natural process values. BLM describes the special management needs for these values in **Appendix F** – Areas of Critical Environmental Concern. Management for wilderness characteristics would be consistent with most, but not all of the special management needed for the Wassen Creek potential ACEC's relevant and important values.

The BLM would not include the management for wilderness characteristics of any inventoried lands with wilderness characteristics under Alternative D. In addition, under Alternative D, a portion of the Wassen Creek potential ACEC includes areas in the Harvest Land Base allocated to timber production on O&C lands. The special management attention required to maintain the relevant and important values conflicts with the management direction of the Harvest Land Base, which is designed to meet the purpose and need described in Chapter 1 for managing the O&C lands. Therefore, under Alternative D the BLM would revise the boundaries of the Wassen Creek potential ACEC to exclude areas in the O&C Harvest Land Base and would designate the remaining area as an ACEC. The Wassen Creek ACEC designation under Alternative D would overlap with inventoried lands with wilderness characteristics, and would provide some protection of those wilderness characteristics through special management of the ACEC.

In contrast, under Alternatives A, B, and C, and the Proposed RMP, the BLM would include the management for wilderness characteristics for inventoried lands with wilderness characteristics and there are no O&C timberlands underlying the potential ACEC. Under these alternatives, the BLM would designate the revised Wassen Creek ACEC that includes the lands with wilderness characteristics.

63. **Comment Summary:** The BLM should revise the EIS to include designation of the Moon Prairie potential ACEC in all alternatives because BLM determined it meets the ACEC eligibility criteria, and it requires special management attention to protect its relevant and important values. The Moon Prairie potential ACEC contains a late-successional forest with slow growing Pacific yew and is unsuitable for timber production due to tree regeneration problems.

Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained-yield forest management in areas allocated to timber production on O&C lands.

The BLM would not designate the Moon Prairie ACEC under Alternatives A, B, C, or D. Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. The Moon Prairie potential ACEC continues to meet the relevance and importance criteria; however, it occurs within the Harvest Land Base land use allocation under Alternative B. The special management attention required to maintain the relevant and important values conflicts with the management direction of the Harvest Land Base, which BLM designed to meet the purpose and need described in Chapter 1 for managing the O&C lands.

Under Alternatives A, C, and D, the Moon Prairie potential ACEC occurs within the Late-Successional Reserve land use allocation, and the special management attention required for maintaining the relevant and important values of the ACEC are provided by the management direction for the Late-Successional Reserve. Thus, designation of Moon Prairie as an ACEC is unnecessary to maintain the relevant and important values under Alternatives A, C, and D.

In preparation for the Proposed RMP and FEIS, BLM refined the boundaries of the Moon Prairie potential ACEC to remove the portion within the Late-Successional Reserve and retain the portion within the Harvest Land Base. Uneven-aged timber management in the revised potential ACEC would contribute to improving forest structure and fire resiliency. Therefore, the BLM would designate this smaller, refined boundary of the Moon Prairie ACEC under the Proposed RMP.

The BLM describes the Timber Productivity Capability Classification (TPCC) and its use in the Woodstock vegetation model in **Appendix C** – Vegetation Modeling. The BLM may manage areas identified as unsuitable for sustained-yield timber production through the TPCC system for other uses, if those uses are compatible with the reason for which the BLM has reserved these lands (as identified by TPCC codes). Neither site-specific evaluation by BLM staff nor the TPCC codes for the Moon Prairie potential ACEC used in the Woodstock vegetation model have identified stand growth concerns warranting Moon Prairie stands' inclusion in a TPCC district-designated reserve. The BLM will periodically add additional areas to those areas reserved through updates to the TPCC system, when examinations indicate that an area meets the criteria for reservation.

64. **Comment Summary:** The BLM used an incorrect justification to determine the Umpqua River Wildlife Area ACEC no longer meets the ACEC criteria.

    Response: The BLM did make an error in the Draft RMP/EIS explaining why the Umpqua River Wildlife Area ACEC no longer meets the ACEC criteria. BLM revised the rationale in the Final EIS to correct the error. The bald eagle is the single relevant and important value needing special management for the Umpqua River Wildlife Area ACEC. Over time, the bald eagle population has grown and the species has been delisted and BLM continues to provide protection under the Bureau's Special Status Species program and the Bald and Golden Eagle Protection Act. The bald eagle and this population no longer meet the ACEC criteria.

65. **Comment Summary:** The BLM should revise the EIS to include designation of the Spencer Creek potential ACEC in all alternatives because BLM determined it meets the ACEC eligibility criteria, and it requires special management attention to protect its relevant and important values. The Spencer Creek potential ACEC contains a natural ecosystem within a unique watershed and provides habitat for important and threatened species.

Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves, or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained yield forest management in areas allocated to timber production on O&C lands.

Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM also evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values.

The Spencer Creek potential ACEC continues to meet the relevance and importance criteria; however, it occurs within the Harvest Land Base land use allocation under Alternatives B, C, and D. The special management attention required to maintain the relevant and important values conflicts with the management direction of the Harvest Land Base, which BLM designed to meet the purpose and need described in Chapter 1 for managing the O&C lands.

Under Alternative A and the Proposed RMP, the Spencer Creek potential ACEC occurs within the Late-Successional Reserve and Riparian Reserve land use allocations, and the special management attention required to maintain the relevant and important values are already provided for by the management direction for the Late-Successional Reserve and Riparian Reserve. No additional management attention is needed to maintain the relevant and important values.

For these reasons, the BLM would not designate the Spencer Creek ACEC under any alternative or the Proposed RMP.

66. **Comment Summary:** The BLM should revise the EIS to designate the Baker Cypress, Cobleigh Road, Poverty Flat, Round Top Butte, and Table Rocks potential ACECs as *closed* OHV Management Areas to protect relevant and important values.

    Response: The BLM reconsidered the designations for public motorized access for potential ACECs in preparation for the Proposed RMP/Final EIS. The BLM changed the designations for public motorized access for many areas, including Baker Cypress, Cobleigh Road, Poverty Flat, Round Top Butte, and Table Rocks potential ACECs to *closed* in the Proposed RMP.

67. **Comment Summary:** Table Rocks ACEC should be retained as an ACEC and not changed to an RMA as the table tops are home to very rare plants and animals that would be negatively impacted by a recreation-focused land use management plan.

    Response: A SRMA designation ensures that the important recreation values at Table Rocks (hiking and environmental education) are protected through the establishment of supporting management actions and allowable use decisions that are reflected in the Recreation Management Area framework for the Table Rocks SRMA. These restrictions ensure the protection of the recreation setting characteristics and the relevant and important ACEC values. These designations have been analyzed in the Proposed RMP/Final EIS and have been found to be compatible.

68. **Comment Summary:** The BLM should revise the EIS to allow neither timber harvesting nor vegetation management to promote the development or maintenance of late seral habitat in the Little North Fork Wilson potential ACEC to protect listed salmonids.

Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained yield forest management in areas allocated to timber production on O&C lands.

Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. The special management attention required to maintain the relevant and important values includes vegetation management to promote the development and maintenance of late-seral habitat. Many forest stands within the potential ACEC, which might be good candidates for vegetation treatments, are less than sixty years old and adjacent to existing roads.

Analysis of fisheries considered the lands within the potential Little North Fork Wilson ACEC for management by the underlying land use allocations by each alternative and determined the impact to these resources accordingly. The Proposed RMP/Final EIS provides for ESA-listed fish habitat in the Riparian Reserve land use allocation and the associated management direction in **Appendix B** – Management Objectives and Direction.

69. **Comment Summary:** The State recommends existing Little Grass Mountain ACEC in the BLM Salem District continue to be included as an ACEC in the EIS.

Response: The BLM evaluates existing, potential, and nominated ACECs to determine if they meet the criteria of relevance and importance as defined in 43 CFR 1610.7–2 at the beginning of land use planning processes. A Salem District Office interdisciplinary team evaluated the existing Little Grass Mountain ACEC and determined that it did not meet the importance criteria. The grassy bald at Little Grass Mountain does not contain any values to set it apart from other Coast Range Grassy Balds and therefore, does not meet the importance criteria. Little Grass Mountain did not move forward in the planning process to be considered as a potential ACEC and was not analyzed in the EIS because it does not meet the basic ACEC criteria.

70. **Comment Summary:** The BLM should revise the EIS to analyze the previously nominated BLM Tract T. 20 S., R.3 W., Sec. 31, SW 1/4 for both an Environmental Education Area (EEA) and Cottage Grove Old Growth ACEC designation in all alternatives. BLM omitted the nominated EEA from Appendix N in the Draft EIS.

Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained-yield forest management in areas allocated to timber production on O&C lands.

Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM also evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. The Cottage Grove Old Growth potential ACEC continues to meet the relevance and importance criteria; however, it occurs within the Harvest Land Base land use allocation under Alternatives A, B, and C. The special

management attention required to maintain the relevant and important values conflicts with the management direction of the Harvest Land Base, which is designed to meet the purpose and need described in Chapter 1 of the EIS for managing the O&C lands. The BLM would not designate the Cottage Grove Old Growth potential ACEC as an ACEC under Alternatives A, B, and C. The BLM would designate the Cottage Grove Old Growth potential ACEC under Alternative D and the Proposed RMP.

Consistent with the analytical methods described on page 110 of the Planning Criteria (USDI BLM 2014), the BLM's inventory determined this BLM-administered tract of land is not legally accessible to the public. The BLM would not consider areas without legal public access as Extensive Recreation Management Areas (ERMAs) or Special Recreation Management Areas (SRMAs) and would not include them in **Appendix O** – Recreation.

71. **Comment Summary:** The BLM should revise the EIS to include designation of the former Long Gulch potential ACEC in all alternatives because it meets ACEC eligibility criteria, and it requires special management attention to protect its relevant and important values. The former Long Gulch potential ACEC overlays lands with wilderness characteristics and must be maintained to protect resident northern spotted owls and the low elevation, old-growth forest.

    Response: The BLM evaluates existing, potential, and nominated ACECs to determine if they meet the criteria of relevance and importance as defined in 43 CFR 1610.7–2 at the beginning of land use planning processes. A Medford District Office interdisciplinary team evaluated the former Long Gulch potential ACEC and determined that it did meet the relevance and importance criteria for natural systems. Only the unique trellised drainage pattern met the importance criteria because it is more than locally significant. The Medford District Office interdisciplinary team determined that maintenance of the trellised drainage pattern does not require special management. The former Long Gulch potential ACEC did not move forward in the planning process a potential ACEC for analysis in the EIS because it does not require special management.

72. **Comment Summary:** The BLM should revise the EIS to retain existing ACECs because these ACECs contribute to protecting watersheds, regulating stream flows, contributing to economic stability of local communities, and provide recreational facilities as mandated in the O&C Act.

    Response: The BLM considers potential ACECs for designation where special management to protect relevant and important values is identified as needed, where their management would not conflict with Congressional reserves or lands under the National Landscape Conservation System, and where special management to retain relevant and important values would not preclude sustained-yield forest management in areas allocated to timber production on O&C lands.

    Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM also evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. Some potential ACECs continue to meet the relevance and importance criteria and occur within the Harvest Land Base land use allocation under some of the alternatives. Under some alternatives and potential ACECs, the special management attention required to maintain the relevant and important values conflicts with the management direction of the Harvest Land Base, which is designed to meet the purpose and need described in Chapter 1 for managing the O&C lands.

An ACEC designation is the principle BLM designation for public lands where special management is required to protect important natural, cultural, and scenic resources, or to identify natural hazards. Contributions toward meeting watershed protection, regulating stream flows, contributing to economic stability and recreation facility provision objectives associated with ACEC designations are incidental unless they have been evaluated and determined to meet the basic ACEC relevance and importance criteria.

73. **Comment Summary:** The BLM should consider the management recommendations for biological diversity and forest composition, structure, and function as described on page 201 of the Topsy/Pokegama Landscape Analysis (USDI BLM 1995) related to the relevant and important values' special management need for all potential ACECs within its geographic scope when developing the EIS.

    Response: Consistent with the authority provided by the FLPMA to designate potential ACECs, the BLM evaluated nominated and existing ACECs to determine whether relevant and important values are present and if special management is needed to maintain those values. The BLM considered the recommendations in the landscape analysis when evaluating areas within the geographic scope of the Topsy/Pokegama Landscape Analysis and when determining their need for special management under the alternatives.

74. **Comment Summary:** The EIS should be revised to include definitions for the alternative columns in Table F-1 of Appendix F.

    Response: The Proposed RMP/Final EIS has been revised to include definitions for the alternative columns in **Table F-1** of **Appendix F** – Areas of Critical Environmental Concern.

75. **Comment Summary:** Maintain Key Watershed designation. The designation of Key Watersheds identifies and prioritizes the management of areas of refugia that are crucial to at-risk and listed fish species and the provision of high quality water for over 1.8 million Oregonians who rely on BLM land for drinking water.

    Response: Chapter 1 describes how BLM would evaluate ACEC nominations, address components of the Aquatic Conservation Strategy, and work with the National Marine Fisheries Service, Oregon Department of Environmental Quality, and the Environmental Protection Agency to develop alternatives to facilitate Endangered Species Act consultation and to satisfy State and Federal water quality rules at the RMP level. Under all alternatives in the EIS, the BLM has generated the equivalent of watershed analysis as needed for NEPA analysis or ESA consultation for implementation actions taken in the future consistent with the plan.

    During scoping for this revision, the BLM included in the Notice of Intent an invitation for ACEC nominations with a June 7, 2012 due date to ensure the nominations would be considered in the analysis. BLM would consider ACEC nominations after determining they meet the relevance and importance criteria and the relevant and important values would require special management attention for their protection. ACEC nominations received between the Draft EIS and preparation of the Final EIS are too late for consideration in this revision.

    However, BLM would evaluate proposals for ACEC nominations at any time. Areas found by the BLM to meet the ACEC criteria and require special management attention would receive temporary

management including reasonable measures necessary to protect the relevant and important resource values from degradation until the BLM fully evaluates the potential ACEC through the resource management planning process.

76. Comment Summary: The State recommends the BLM revise the EIS to consider a new interagency ACEC nomination for "hydrologically unique watersheds that support cold water refugia to aquatic biota." The BLM would collaborate with ODFW and DEQ to develop the ACEC nomination.

Response: Recommendations for a collaboratively developed ACEC nomination received between the Draft RMP/EIS and preparation of the Proposed RMP/Final EIS are too late for consideration in this revision.

During scoping for this revision, the BLM included in the Notice of Intent an invitation for ACEC nominations with a June 7, 2012, due date to ensure the nominations would be considered in the analysis. BLM would consider ACEC nominations after determining they meet the relevance and importance criteria and the relevant and important values would require special management attention for their protection. At this time, the recommendation is not complete enough for the BLM to evaluate as an ACEC nomination.

However, the BLM would evaluate proposals for ACEC nominations at any time. Areas found by the BLM to meet the ACEC criteria and that require special management attention would receive temporary management including reasonable measures necessary to protect the relevant and important resource values from degradation until BLM fully evaluates the potential ACEC through the resource management planning process.

Chapter 1 describes how the BLM would evaluate ACEC nominations and how BLM would work with the National Marine Fisheries Service, Oregon Department of Environmental Quality and the Environmental Protection Agency to develop alternatives to facilitate Endangered Species Act consultation and to satisfy State and Federal water quality rules at the RMP level.

77. Comment Summary: The BLM should identify potential climate refugia (e.g., low elevation river corridors, north-facing slopes, elevational and latitudinal corridors, and related high elevation land-bridges, see Olson *et al*. 2012) and include these in a climate-robust reserve design as ACECs or other protective designations.

Response: The BLM has designed land use allocations to respond to the purpose and need. There is no purpose and need that would result in a designation of "climate refugia" on the landscape. The BLM has considered ACECs in this analysis based upon nominations received and consideration of special management and relevant and important values.

Climate Change

78. Comment Summary: The carbon analysis is superficial and misrepresents what would occur. Carbon calculations must account for the current amount of carbon stored in the area, the risk of loss due to natural events and ecosystem processes, transformation into other forms of long-term storage, the emissions of wood substitutes for construction and substitutes for fossil fuels, and the changing rates of CO_2 uptake as a forest ages.

Response: As explained in the Draft RMP/EIS (USDI BLM 2015, pp. Appendix G) the carbon analysis includes the current amount of carbon stored in the area, probable loss due to wildfire, and long-term carbon storage in harvested wood products. The BLM lacks the data necessary to evaluate potential carbon losses from insects and disease. Only a few studies have measured and analyzed carbon losses from decay (respiration) and only under specific circumstances and forest types that the BLM cannot extrapolate to cover the decision area. Incorporating decay rates is not a common practice in carbon calculations globally or nationally. The BLM incorporated carbon losses from thinning into the changes in volume as stands are harvested in the Woodstock model. All alternatives would increase carbon storage over time, indicating that carbon sequestration would occur. Discussion of the emissions of wood substitutes for construction material is outside the scope of this analysis. Discussion of the substitution of wood for fossil fuels in energy production would be speculative at this time, as there are no known facilities in operation, construction, or planned that would use wood or forest residues for biofuel production within or near the decision area.

79. **Comment Summary:** The carbon analysis holds the effect of wildfire constant, which contradicts the findings of differences in fire resistance in the Fire and Fuels section.

    Response: As stated in the Draft RMP/EIS, the Fire and Fuels section analyzed the potential impacts of the different alternatives on wildfire risk, but the BLM has no method to translate these changes in risk into meaningful differences in wildfire occurrence and wildfire effects for the alternatives (USDI BLM 2015, p. 212). The Draft RMP/EIS discussed the potential for additional loss of carbon due to increased wildfire occurrence and severity (USDI BLM 2015, p. 156).

80. **Comment Summary:** The carbon storage analysis misuses the Carbon OnLine Tool (COLE).

    Response: The BLM recognizes that the data available in the Carbon OnLine Tool (COLE) represents smoothed values and includes stands that are uneven-aged. The area the BLM analyzed includes uneven-aged stands and most alternatives include uneven-aged management over a portion of the decision area. The BLM explored various methods for estimating the carbon in the understory as stands age, but found no other methods that could be coupled with the volume and stand age information provided by the Woodstock model. Most carbon estimation procedures focus solely on the harvestable trees, leaving the BLM with few options to account for all components of aboveground carbon. The commenter does not offer an analytical methodology that they believe would be superior.

    The Proposed RMP/Final EIS has added comparison of these analytical results with results from other analyses. In comparing the estimates in the Draft RMP/EIS with the most recent estimates made by the U.S. Forest Service, the BLM estimates were comparable, providing confidence that the BLM's methods provide a reasonable estimation of effects. As stated in the Draft RMP/EIS, different carbon storage analysis methods will produce different estimates (USDI BLM 2015, pp. 133, 1106). Although the BLM reported the estimated net carbon storage for each alternative, the BLM considers the relative differences between the alternatives as more informative than the absolute calculated values.

81. **Comment Summary:** The DEIS is incomplete in not presenting the best science on carbon flux using regionally specific models such as Landcarb.

Response: The BLM evaluated the use of Landcarb to estimate carbon storage for the different alternatives. In its present form, Landcarb can only analyze landscape-scale carbon for the western Cascades, which does not cover the entire analysis area. Landcarb analyzes carbon for all Federal lands in aggregate, which does not allow the BLM to evaluate the effects of the alternatives on the land base separately from other Federal lands. These two factors alone made Landcarb an unsuitable method for estimating carbon storage in this analysis. The Carbon OnLine Tool contains regionally-specific data that encompasses the entire planning area. As discussed in Appendix G of the Draft RMP/EIS, the BLM tailored the carbon estimates by generating reports specific to the county or counties in which each BLM office occurs (USDI BLM 2015, pp. 1103–1104).

82. **Comment Summary:** Carbon stored in wood products should not be included in the carbon estimates.

    Response: The Intergovernmental Panel on Climate Change (IPCC) considers carbon stored in wood products as an important carbon pool (e.g., Chapter 4 in IPCC Guidelines for National Greenhouse Gas Inventories, 2006). The Environmental Protection Agency reports carbon stored in harvested wood products in use and in solid waste disposal sites (landfills) as a carbon sink in its annual greenhouse gas inventories for the United States. The BLM followed these standards in including carbon stored in harvested wood products as part of the carbon storage estimations.

83. **Comment Summary:** The BLM should include current and regionally appropriate literature from Krankina *et al*. (2014).

    Response: The BLM reviewed Krankina *et al*. (2014) and determined it would not add substantial information to the analysis. The carbon storage estimations in Krankina *et al*. (2014) are for 2008 and the data do not identify the amount of carbon estimated to occur on BLM-administered lands within the planning area. The BLM carbon analysis used data current as of 2013. The Proposed RMP/Final EIS has added discussion that places the estimated carbon storage and carbon density estimates in context with U.S. Forest Service lands, State of Oregon lands, and private lands.

84. **Comment Summary:** The DEIS should include a recommendation for a carbon tax on logging older forests on BLM land in Oregon.

    Response: The BLM has no authority to impose taxes. Policy recommendations by the BLM to Federal, State, or local government entities with the authority to impose taxes would be beyond the scope of a BLM RMP.

85. **Comment Summary:** The RMP as proposed would contribute to climate change by reducing the amount of carbon stored in the ecosystem.

    Response: The commenter is mistaken. The Draft RMP/EIS clearly stated that all alternatives, including the No Action alternative, would increase net carbon stores over time on the BLM-administered lands within the decision area (USDI BLM 2015, p. 135). The commenter identified no error in this analysis.

86. Comment Summary: The carbon section should include a literature review on the importance of older forests in carbon storage.

Response: A literature review of the importance of older forests for carbon storage is not necessary to understand the potential impacts of the alternatives on carbon storage on BLM-administered lands. Since the analysis includes all stands, including older stands, it includes the importance of older stands in carbon storage. An extensive discussion of the role of older forests in storing carbon would not improve the quality of the analysis or provide for a reasoned choice among alternatives. The BLM has not included such a literature review in keeping with CEQ direction that environmental analyses should not be encyclopedic in nature but should focus on the information relevant to the decisions to be made (40 CFR 1500.4).

87. Comment Summary: Carbon benefits of fuel reduction logging are scientifically controversial.

Response: The BLM agrees that there is scientific uncertainty about the potential effects of hazardous fuels treatments on carbon storage by altering the effects of wildfire on carbon storage. The Draft RMP/EIS acknowledged that hazardous fuels treatments can affect wildfire risk, but the BLM has no method to translate these changes of risk into meaningful differences in wildfire occurrence and wildfire effects for the alternatives (USDI BLM 2015, p. 212). Many studies have demonstrated the ability of certain hazardous fuels prescriptions to reduce the potential and actual emissions from wildfire at the stand scale, but have not been able to provide the same evidence at the landscape scale, largely due to the lack of sufficiently sized fuels treatments to test hypotheses. Most analyses examining the carbon implications of thinning to reduce wildfire emissions are conducted using a static climate instead of a changing climate and the associated changing wildfire risks, largely due to the complexity of incorporating such factors. Further, the Draft RMP/EIS did not claim that hazardous fuels reduction treatments would increase carbon storage, but that hazardous fuels treatments have the potential to reduce carbon losses and greenhouse gas emissions from wildfires by moderating fire behavior and the amount of fuels consumed.

Many studies indicate that the carbon storage capability of western forests will decline to some degree, especially after mid-century. The Proposed RMP/Final EIS added information specific to western Oregon discussing potential productivity declines, which would affect potential carbon storage regardless of the presence or absence of wildfires and thinning to reduce hazardous fuels. Several studies have shown that thinning to reduce hazardous fuels would have dubious carbon benefits within forests with long fire return intervals, but that there may be some benefit in forests with short fire return intervals. The Proposed RMP/Final EIS has expanded the discussion of the effects of thinning on carbon storage in different forest conditions.

88. Comment Summary: The DEIS does not link the potential impact of climate change on critical tree species to the alternatives to know which alternative best meets societal need for minimizing carbon emissions while maximizing carbon storage over the coming decades.

Response: The BLM does not have any effective method to link information about potential changes in forest composition and productivity to the alternatives. Climate change adaptation and mitigation largely occurs at the project level, as managers need to consider how climate change may affect specific sites, which is beyond the scope of this analysis. Projections of vegetation change with changing climate conditions include uncertainty over the exact type of change, the rate, and the magnitude. Evaluating how growth and yield would change as forests change, with and without management, would depend greatly on what climate projection is used. The BLM has no basis for

determining which climate model is 'correct.' Furthermore, the vegetation modeling relies on growth and yield modeling based on empirical measurements for a vast array of stand conditions (USDI BLM 2015, pp. 991–999). It would be impossible to produce growth and yield modeling for the stand conditions across the decision area based on a projection of how such stands would grow in the future. As a result, the carbon analysis can only examine the effects of different forest management approaches over time assuming stand growth and yield based on empirical measurements (i.e., the current conditions). The commenter does not explain how the BLM could reasonably link the potential changes in forest composition and productivity to the alternatives.

The purpose and need for this RMP revision does not include meeting a "societal need for minimizing carbon emissions while maximizing carbon storage." As stated in the response above, the BLM based the purpose and need for this RMP revision on the laws that apply to the BLM. The BLM has no specific legal mandate to address climate change and maximize carbon storage comparable to the legal mandates reflected in the purpose and need for this RMP revision, such as, for example, the purpose of contributing to the conservation and recovery of threatened and endangered species in accordance with the Endangered Species Act. Therefore, even if the BLM were able to link information about potential changes in forest composition and productivity as a result of climate change to the alternatives, this information would not be relevant to evaluating how well the alternatives would respond to the purpose and need for action.

89. Comment Summary: The EIS analysis should clearly disclose the carbon consequences of different stream buffer widths, reserves verses the harvest land base, reserve size, degree of management allowed in reserves, thinning verses regeneration harvest, and different age limits.

Response: The analysis in the Draft RMP/EIS discloses the effects of these factors in the analysis of net carbon storage. The alternatives in the Draft RMP/EIS differ in their "stream buffer widths, reserves verses the harvest land base, reserve size, degree of management allowed in reserves, thinning verses regeneration harvest, and different age limits," and the Draft RMP/EIS quantitatively compares the net carbon storage of the different alternatives over time. The analysis does not attempt to particularize the carbon effects of individual land use allocations within each alternative, which would be impossible given the integrated nature of the alternatives and the vegetation modeling. Regardless, a lengthy discussion of the specific effect of individual land use allocations would not improve the quality of the analysis or provide for a reasoned choice among the alternatives.

90. Comment Summary: The carbon analysis should incorporate the concept of carbon debt to evaluate the short- and long-term trade-offs of logging verses conserving and restoring mature and old-growth forests.

Response: The BLM investigated the scientific literature concerning the carbon debt concept. This literature discusses the term primarily in connection with conversion of tropical forests to crops for use in commercial-scale bioenergy production and on the use of boreal forest for the production of commercial-scale liquid biofuels. There are no known plants operating, under construction, or planned within or near the decision area that would use timber or forest residues to produce liquid biofuels. Given this literature, the BLM determined that a discussion of carbon debt would not improve the quality of the analysis or provide for a reasoned choice among the alternatives. In addition, all alternatives would result in increases in net carbon storage over time, suggesting that no carbon debt would be incurred by the various levels of timber harvest in each alternative.

91. Comment Summary: The carbon analysis does not separate carbon stored in wood products verses carbon stored in live trees.

Response: The Proposed RMP/Final EIS has added discussion disclosing the estimated range of carbon stored in wood products.

92. Comment Summary: The greenhouse gas emissions analysis from forestry operations should be analyzed in relation to CEQ's recommended thresholds and include a social cost of carbon calculation. The BLM should remain below the CEQ threshold in order to comply with the White House interest in reducing climate change impacts.

Response: The commenter is mistaken about the nature of the suggested threshold in the draft CEQ guidance; the CEQ suggested this as a threshold for when to analyze greenhouse gas emissions, not a target for management of emissions. In 2014, the CEQ released revised draft guidance for public comment that describes how Federal departments and agencies should consider the effects of greenhouse gas emissions and climate change in their NEPA reviews (CEQ 2014). This revised draft guidance includes the suggestion to use annual emissions of 25,000 Mg CO_2e as a reference point for indicating when a quantitative analysis of greenhouse gas emissions may be warranted. This guidance also clearly states that this suggested reference point is not a target that land management agencies must attain. In accordance with this draft guidance, the BLM quantitatively estimated expected greenhouse gas emissions from forest management operations, prescribed burning, and livestock grazing as well as from wildfire in the Draft RMP/EIS (USDI BLM 2015, pp. 136–140). In addition, the Draft RMP/EIS analyzed the social cost of carbon (USDI BLM 2015, pp. 502–523). The commenter identifies no error in those analyses.

93. Comment Summary: The BLM's atmospheric CO_2 levels (p. 137) need to be updated to account for the global level of 400 ppm that was crossed last year.

Response: The atmospheric CO_2 concentration that the BLM reported in the Draft RMP/EIS is an average annual concentration as reported by the Global Carbon Project (GCP). The GCP has not updated this value for 2014 in time for the preparation of the Proposed RMP/Final EIS. The Proposed RMP/Final EIS has updated this information to acknowledge that the data available from the Earth System Research Laboratory indicates that the preliminary global average atmospheric CO_2 concentrations reached 397.15 ppm in 2014. At the Mauna Loa Observatory, atmospheric CO_2 concentrations exceeded 400 ppm in April through June of 2014 and in February through July of 2015.

94. Comment Summary: The BLM should not compare logging greenhouse emissions to the entire state of Oregon or the nation but to similarly scaled industries in Oregon.

Response: Cumulative effects analysis of greenhouse gas levels is challenging, in part, because of the difficulty in setting the geographic scope for the analysis. The Draft RMP/EIS placed BLM greenhouse gas emissions from harvest operations and prescribed burning into context with emissions from harvest operations and prescribed burning of other forest managers in western Oregon. The cumulative effects analysis of greenhouse gas emissions in the Draft RMP/EIS presented the incremental effect of the alternatives within the context of cumulative greenhouse gas emission at multiple spatial scales, including state and national total emissions (USDI BLM 2015, pp. 139–140). The Proposed RMP/Final EIS added discussion of how the proportion of BLM greenhouse gas

emissions might change relative to other forest managers (see the Climate Change section of Chapter 3). The commenter provided no indication as to what industries they consider as "similarly scaled" to BLM land management in western Oregon or how placing the BLM emissions in a different context would improve the quality of the analysis or provide for a reasoned choice among alternatives.

95. Comment Summary: Carbon emissions from logging and foregone opportunities for increased carbon storage in forests directly conflict with state, Federal, and international greenhouse gas reduction goals.

Response: The commenter is mistaken. As clearly stated in the Draft RMP/EIS, all alternatives would increase carbon storage relative to the current condition, supporting state, national, and international goals to increase carbon storage (USDI BLM 2015, pp. 132–136).

The Federal government has not established any specific goals with respect to carbon storage and does not require that Federal agencies maximize carbon storage. Executive Order 13653, issued on November 6, 2013, directs the Federal agencies to develop or modify programs and policies to promote "…greater climate resilience and carbon sequestration, or other reductions to the sources of climate change." In response, DOI updated the climate adaptation plan in 2014. The only specific direction with respect to carbon storage or carbon sequestration is to consider developing a formal policy for DOI bureaus to incorporate carbon storage as an explicit element of resource management plans (DOI Climate Change Adaptation Plan, p. 43). As of the preparation of the Proposed RMP/Final EIS, neither DOI nor the BLM has issued either draft or final policy that sets carbon storage goals.

The State of Oregon established statewide goals for greenhouse gas emissions reduction, but the focus of reductions is on transportation and energy production and use. The Proposed RMP would support the State's 2004 strategy for greenhouse gas reductions by increasing carbon storage.

96. Comment Summary: The BLM discussion of greenhouse gas emissions is too perfunctory and essentially dismisses the emissions problem on the basis that these forests represent a small percentage of the total emissions of the U.S.

Response: The BLM disagrees that the analysis of greenhouse gas emissions is "too perfunctory." Analysis in an EIS must provide a 'hard look' at the effects of the alternatives. A 'hard look' is a reasoned analysis containing quantitative or detailed qualitative information (USDI BLM 2008, p. 55). The Draft RMP/EIS presents background on the role of greenhouse gas emissions in climate change, quantitatively analyzes the greenhouse gas emissions under each alternative, and places those emissions in context of statewide and national emissions and in the context of other forest managers with respect to harvest operations and prescribed burning (USDI BLM 2015, pp. 136–140). The Draft RMP/EIS provides a reasoned analysis to present analytical conclusions on the comparative effects of the alternatives on greenhouse gases. Thus, the Draft RMP/EIS took a 'hard look' at greenhouse gas emissions. The Draft RMP/EIS presents no conclusion about the extent to which the BLM will consider greenhouse gas emissions in the eventual selection of the RMP. The commenter identifies no error in this analysis.

97. Comment Summary: An additional issue of importance is assessing the carbon cost of management versus the carbon cost of no management. From a carbon storage perspective, the critical question is

how much carbon is emitted through management to prevent wildfire compared to that which would be lost by wildfire.

Response: The Draft RMP/EIS quantitatively analyzed the effects on carbon storage of management action under the alternatives and the effects of wildfire on carbon storage (USDI BLM 2015, pp. 132–135). The Proposed RMP/Final EIS added discussion of the potential effects of hazardous fuels treatments on carbon storage (see the Climate Change section of Chapter 3). The BLM does not claim that forest management would prevent wildfires from occurring, just that management could reduce wildfire intensity and severity, potentially reducing greenhouse gas emissions from wildfire, particularly in forests adversely affected by fire suppression (USDI BLM 2015, pp. 158–159). The Draft RMP/EIS acknowledged that hazardous fuels treatments can affect wildfire risk, but the BLM has no method to translate these changes in risk into meaningful differences in wildfire occurrence and wildfire effects for the alternatives (USDI BLM 2015, p. 212). The commenter presents no additional information that would allow the BLM to analyze quantitatively the changes in wildfire occurrence and effects in response to hazardous fuels treatments or other management actions.

98. Comment Summary: Error in **Figure 3-29** concerning annual minimum temperature for the Willamette Basin.

Response: The Proposed RMP/Final EIS corrected this figure (see the Climate Change section in Chapter 3).

99. Comment Summary: The description of regional climates is oversimplified; the Willamette Valley has a Mediterranean climate.

Response: The Draft RMP/EIS described regional climate types to provide background to the analysis. Whether the discussion characterizes the Willamette Valley as a maritime or Mediterranean climate type would not alter the analysis of environmental effects of the alternatives or the analytical conclusions. Climatologists and geographers over time have classified the climate of the Willamette Valley as maritime and as Mediterranean. Two climate classification schemes are available—Köppen-Gieger and modified Thornthwaite (Kottek *et al.* 2006, Grundstein 2008). The Köppen-Geiger system uses monthly average temperatures and the degree of difference between winter and summer precipitation to identify climate categories (Kottek *et al.* 2006). In contrast, the modified Thornthwaite system uses potential evapotranspiration and a moisture index (Grundstein 2008). Climate scientists and geographers use the Köppen-Geiger system more widely than the modified Thornthwaite, but recognize both. The Köppen-Geiger system for the years 1951 through 2000 classified all or nearly all of western Oregon, including the Cascade Mountains, as warm temperate with warm, dry summers (Kottek *et al.* 2006), which is typically labeled as coastal Mediterranean or Mediterranean. There are some differences on the far northwest Oregon coast in the available maps of this classification. The modified Thornthwaite scheme classifies the Willamette Valley as cool-wet, the same as the Oregon coast, and the interior valleys of southwest Oregon as cool-moist based on climate data from 1970 through 1999 (Grundstein 2008). The presence or absence of a fog belt is not relevant under both classification systems. The maritime influence on climate is strongest in winter and weakest in summer across the state beyond the immediate coast. However, the Willamette Valley does experience a stronger maritime influence in summer than southwest Oregon, as conditions are typically cooler and moister with more episodes of low cloud cover and light rain; the period of hottest weather is also shorter. The BLM also asked the Oregon Climate Change Research Institute whether the Willamette Valley climate should be considered as Mediterranean or maritime (K. Dello,

2015 personal communication); they stated that maritime was a better description, but also that such designations were not meaningful scientifically.

100. Comment Summary: The estimates of climate change vulnerability in **Table 3-24** should include the drought tolerance ratings from Niinemets and Valladares (2006).

Response: The Draft RMP/EIS used information from Devine *et al*. (2012), which includes a drought tolerance rating relative to all other trees in a particular subregion as part of the habitat affinity score used to develop an overall climate change vulnerability score (USDI BLM 2015, pp. 145–147). The BLM reviewed the information contained in Niinemets and Valladares (2006) and concluded that adding the drought tolerance rating from that source would not change the analysis or add value to the table. The Devine *et al*. (2012) data show how the climate vulnerability of a species may vary between northwest and southwest Oregon, whereas the Niinemets and Valladares (2006) data does not. Thus Devine *et al*. (2012) provides more specific and relevant information for this analysis than Niinemets and Valladares (2006).

101. Comment Summary: Expand the fire discussion to include more information on how fire regimes will change as climate changes.

Response: The Proposed RMP/Final EIS has added discussions of potential changes in fire risk as climate changes (see the Climate Change section of Chapter 3). As discussed in the Draft RMP/EIS, scale mismatches and the lack of important bottom-up controls on fire in current projections means that the BLM cannot be very specific about how and where fire regimes might change as climate changes particularly given that the mixed severity fire regime category is very broad (USDI BLM 2015, p. 156). Within the mixed severity regimes, the proportion of high and low severity patches may shift, but the fire regime could remain in the mixed severity category. Further, the breakpoints between low, mixed, and high severity regimes are completely subjective, with various scientists providing different breakpoints. The BLM typically uses the breakpoints incorporated into LANDFIRE (6–25 percent stand-replacement equals low severity, 25–75 percent stand-replacement equals mixed, and greater than 75 percent stand-replacement equals high severity), which is a national program widely used by agencies and fire scientists and fire ecologists. In addition, as the Draft RMP/EIS pointed out, current projections assume that past climate-fire relationships will persist into the future (USDI BLM 2015, p. 156). If these relationships do not persist, the BLM has no method to determine how and where fire regimes would change.

102. Comment Summary: Thinning as a climate change adaptation strategy will not increase drought resistance in the long-term.

Response: The Draft RMP/EIS stated that Joyce *et al.* (2009), Spies *et al.* (2010), and Peterson *et al.* (2011) summarized specific actions recommended for responding to climate change, including thinning forest stands to reduce competition and drought stress (USDI BLM 2015, p. 158). The Draft RMP/EIS does not contain an analytical conclusion that thinning, as a climate change adaptation strategy, will increase drought resistance in the long term. The Draft RMP/EIS simply described recommendations in the existing literature.

103. Comment Summary: Page 156 claims that more fires equals more homogeneity and that this is bad for biodiversity. Regionally specific studies on mixed severity regimes should be cited instead.

Response: The Draft RMP/EIS did not claim that more fires would result in more homogeneity and hence lower biodiversity. Instead, the Draft RMP/EIS stated that the likelihood of such outcomes would increase as climate changes and assuming that current fire-climate relationships persist into the future. It also states that the outcomes of future fires also depend on bottom-up controls that are not incorporated into current projections of wildfires, indicating some uncertainty that the stated potential outcomes would occur. The Draft RMP/EIS cited multiple studies concerning projections of increased burn severity (USDI BLM 2015, pp. 155–156). The Proposed RMP/Final EIS has added discussion and cited additional studies regarding future changes in wildfires, primarily to the drier forests of the planning area.

104. Comment Summary: The section on fire, page 155, needs a comprehensive literature review including recent studies that show no increase in fire extent or severity in this region.

Response: The Draft RMP/EIS reported an increase in the proportion of high-severity fire within forests in the entire state of Oregon based on Monitoring Trends in Burn Severity data and stated that establishing any similar trend or lack of trend is not possible within the planning area due to inadequate data (USDI BLM 2015, p. 149). The Draft RMP/EIS cited relevant literature on the effects of climate change on wildfire, sufficient to understand the potential cumulative effect of climate change and future wildfires together with the effects of the alternatives (USDI BLM 2015, pp. 148–149, 155–156). A literature review of the effects of climate change on wildfire is not necessary to understand the potential impacts of the alternatives. An extensive review of the literature on the effect of climate change on wildfires would not improve the quality of the analysis or provide for a reasoned choice among alternatives. The BLM has not included such a literature review in keeping with CEQ direction that environmental analyses should not be encyclopedic in nature but should focus on the information relevant to the decisions to be made (40 CFR 1500.4).

105. Comment Summary: The RMP should incorporate projections of climate change into vegetation and fire behavior modeling.

Response: The Draft RMP/EIS acknowledged the potential effects of climate change on stand growth. Separate from the vegetation modeling with Woodstock, the BLM reviewed bioclimatic envelope model projections and evaluated the potential effects and associated uncertainty of projected climate changes on a variety of forest management outcomes for the planning area conducted using the Climate extension of the Forest Vegetation Simulator model (USDI BLM 2015, pp. 152–154). The Draft RMP/EIS explicitly explained why the vegetation modeling did not incorporate projections of climate change into the simulation of the growth of stands through time. Specifically, to translate these broad regional predictions of climate change with substantial uncertainties to projections of how and when specific groups of forest stands would change in their patterns of growth and response to treatment over the next several decades would be so speculative as to be arbitrary (USDI BLM 2015, p. 100). Furthermore, the vegetation modeling relies on growth and yield modeling based on empirical measurements for a vast array of stand conditions (USDI BLM 2015, pp. 991–999). It would be impossible to produce growth and yield modeling for the stand conditions across the decision area based on a projection of how such stands would grow in the future. The commenter does not address these explanations.

The Draft RMP/EIS discussed the potential effects of climate change on future wildfire occurrence and severity. The Draft RMP/EIS identified that most climate change projections indicate that wildfires are likely to get larger and more severe in the future. The Draft RMP/EIS explicitly

explained why the vegetation modeling did not incorporate projections of the effects of climate change on future wildfire occurrence and severity. Specifically, the inherent challenges in predicting future stochastic events coupled with the uncertainties in climate change predictions make it impossible to forecast specifically when and where future wildfires would occur differently than they have occurred in the recent past (USDI BLM 2015, pp. 99, 1053–1055). The commenter does not address these explanations.

106. Comment Summary: The FEIS should identify and discuss climate refugia, reserve redundancy, and reserve connectivity as strategies to address climate change.

Response: The Proposed RMP/Final EIS added discussion concerning the potential role of various types of reserves to serve as climate change refugia (see the Climate Change section of Chapter 3). The Draft RMP/EIS discussed the potential role of reserves in providing connectivity and redundancy for a wide range of resources (see, for example, USDI BLM 2015, pp. 217–235, 354–356, 701–708, and 738–818).

107. Comment Summary: The DEIS claims that the region is getting drier even though precipitation is either equivocal or projected to increase.

Response: The 'dryness' of an area is a function of both precipitation and temperature as is readily demonstrated by climate data around the world. Two regions may have very similar average annual precipitation but the region with a higher average temperature is drier than the region with a lower average temperature and generally supports less vegetation. This difference is due to fundamental ecosystem processes concerning evapotranspiration demand. As evapotranspiration demand increases, a region becomes effectively drier. Every biogeographic vegetation model uses this fundamental property to assess how climate influences vegetation distribution and how climate change may alter vegetation distribution. As stated in the Draft RMP/EIS, the low increase in precipitation when combined with the more substantial increases in temperature, particularly in minimum temperature, indicates the region is becoming effectively drier (USDI BLM 2015, p. 143).

108. Comment Summary: The wildlife and wildlife habitat section on page 157 lacks a comprehensive literature review and is missing citations relevant to the region.

Response: As stated in the Draft RMP/EIS, a comprehensive review of the impacts of climate change on all fish and wildlife species found within the planning area is not possible (USDI BLM 2015, p. 150). Instead, the discussion focused on two key species relevant to the purpose and need—northern spotted owl and marbled murrelet—as illustrative. The Draft RMP/EIS cited relevant literature on the possible impacts of climate change to northern spotted owls and marbled murrelet (USDI BLM 2015, p. 157). A literature review of the effects of climate change on wildlife is not necessary to understand the potential impacts of the alternatives. An extensive review of the literature on the effect of climate change on wildlife would not improve the quality of the analysis or provide for a reasoned choice among alternatives. The BLM has not included such a literature review in keeping with CEQ direction that environmental analyses should not be encyclopedic in nature but should focus on the information relevant to the decisions to be made (40 CFR 1500.4).

109. Comment Summary: The recommended actions on page 158 for building resilience are incomplete (e.g., Black *et al*. 2013). What evidence does BLM have that insect outbreaks can be suppressed by thinning?

Response: The Draft RMP/EIS does not claim that thinning will suppress insect outbreaks. Instead, it cited several climate change adaptation review papers that recommend thinning to increase resistance to insects, among other disturbance factors (USDI BLM 2015, p. 158). The BLM reviewed Black *et al*. (2013) and determined it does not add any additional information to the discussion in the Draft RMP/EIS. Black *et al*. (2013) discusses whether thinning can reduce the spread of large landscape-scale outbreaks once bark beetles have reached epidemic proportions. Neither the Draft RMP/EIS nor the climate change adaptation review papers cited in the Draft RMP/EIS assert that thinning could reduce outbreaks once they reach epidemic proportions. Black *et al*. (2013, p. 62) also reports that thinning can reduce the susceptibility to insect attack, thus supporting the adaptive strategy recommended in the climate change adaptation review papers cited in the Draft RMP/EIS.

110. Comment Summary: The discussion on the bottom of page 159 is not based on the best science in assuming that reserves are less resilient and resistant to climate change than managed areas.

Response: The Draft RMP/EIS did not claim that reserves are necessarily less resilient and resistant to climate change than actively managed areas. The Draft RMP/EIS stated that decreasing the management options decreases the opportunities for the BLM to take actions intended to adapt to climate change (USDI BLM 2015, p. 159). The previous paragraphs in this section discussed how active management provides opportunity for the BLM to increase resistance and resilience to climate change in keeping with the types of strategies identified in the Draft RMP/EIS (USDI BLM 2015, pp. 158–159). The Proposed RMP/Final EIS has added discussion to clarify the potential risks associated with minimally managed reserves under changing climate conditions (see the Climate Change section of Chapter 3).

111. Comment Summary: The DEIS is incorrect in stating that large-scale thinning to reduce crown fire potential and provide biomass for wood energy would reduce CO_2 emissions. Thinning would result in long-term carbon emissions because many of the areas thinned would not experience fire during the period of treatment effectiveness. Thinning also does not reduce fire occurrence, particularly during extreme conditions and especially in the climate-driven fire systems such as this region.

Response: The Draft RMP/EIS did not state that large-scale thinning to reduce crown fire potential would reduce CO_2 emissions as a blanket conclusion. The Draft RMP/EIS reported the findings from several studies that indicate thinning and prescribed burning in forests adversely affected by fire suppression, largely the drier forests, indicate that such reductions are possible (USDI BLM 2015, p. 159). The Draft RMP/EIS made no claims nor cited any studies concerning the effects of thinning and prescribed burning on the potential future emissions from forests not adversely affected by fire suppression, largely the moister forests. The Draft RMP/EIS did not assume that thinning for bioenergy production would occur, nor did it discuss the potential effects of wood harvested for bioenergy on future CO_2 emissions. As discussed in the Draft RMP/EIS, biomass for energy use, primarily personal use firewood, is a by-product of forest management for other purposes, with low utilization of this potential resource (USDI BLM 2015, pp. 497–498).

Whether thinned areas would or would not experience fire during the period of treatment effectiveness is not known nor is it discussed. While the probability of any specific location burning

is very low, several hundred to tens of thousand acres in western Oregon burn every year, primarily in the drier forests (see the Fire and Fuels section of Chapter 3).

The Draft RMP/EIS did not state or conclude that thinning would reduce wildfire occurrence. Instead, the Draft RMP/EIS stated that thinning could moderate wildfire effects (USDI BLM 2015, pp. 158–159). Fire occurrence depends on ignitions. Fire effects depend on the combination of fuels characteristics, weather, and topography at the time and location of the wildfire (USDI BLM 2015, pp. 173–177).

112. Comment Summary: The RMP should project the forest composition of southern Oregon under the alternatives as climate changes.

Response: The Draft RMP/EIS discussed how climate change could potentially alter forest composition and productivity. The Draft RMP/EIS reviewed bioclimatic envelope model projections and evaluated the potential effects and associated uncertainty of projected climate changes on a variety of forest management outcomes for the planning area conducted using the Climate extension of the Forest Vegetation Simulator model (USDI BLM 2015, pp. 152–154). However, the BLM has no methodology for projecting how forests within southern Oregon or the rest of the planning area would actually change or at what specific rate. Species change ranges as individuals, not as community groups, and bottom-up controls on species migration (competition, soils, topography, disturbance regimes, and so forth) generally are not widely incorporated into various models of changing species ranges largely due to lack of suitable information how these factors affect species distributions. The BLM has no way to determine which climate change model is the most appropriate for determining the magnitude and rate of change. Lastly, as the climate change impacts literature makes clear, climate change is not linear, but proceeds at an irregular rate. All these variables mean that any projections the BLM would make about the composition of southern Oregon forests arising from climate change with or without the management direction proposed in the different alternatives would be speculative.

113. Comment Summary: It would aid readers to explicitly state in the Key Points which alternative increases carbon storage the most and which increases it the least and which alternative emits the most greenhouse gases and which the least.

Response: The Proposed RMP/Final EIS has added the suggested information to the key points (see the Climate Change section of Chapter 3).

114. Comment Summary: Contrary to the DEIS analysis, logging will reduce forest resilience and BLM needs to recognize this. There is strong evidence that unmanaged forests have great capacity for self-correction and self-organization. The BLM should look carefully at all the evidence, including competing experts' viewpoints before concluding that logging is beneficial. Complex native forests are more resilient to climate change than logged forests and simplified plantations.

Response: There is scientific uncertainty about the potential effects of different forest management strategies on forest resilience in the face of climate change. The Proposed RMP/Final EIS has added discussion and citations regarding competing viewpoints on this topic (see the Climate Change section of Chapter 3). While the science is clear that complex forests have more resilience to a variety of disturbances than simplified forests, there is less evidence that logged forests have less resilience than unlogged forests, particularly to climate change. "Logging" is a very broad term that applies to a

wide range of tree removal, both commercial and non-commercial, and ranging from relatively light thinning of the lower tree canopy to clearcutting with no retention of any trees. Further, 'complexity' has many facets, not all of which confer resilience to all disturbances and to climate change. Whether 'logged' forests are less resilient to climate change depends on what is removed, what remains, and, in the case of regeneration harvesting, what is planted. Thinning, particularly in drier forests, to increase resistance to a variety of stressors including climate change is a very common recommendation from forest scientists who have studied the implications of climate change on forests (USDI BLM 2015, pp. 157–158).

115. Comment Summary: The DEIS on page 149 and in **Appendix D** contradict each other. DEIS (p 149) says "*analysis of Oregon large fires using data from the Monitoring Trends in Burn Severity site* (http://mtbs.gov/index.html*) indicates that the proportion of high-severity fire in forests generally has increased by 11percent since 1984, with much of the increase since 2000.*" This appears to be contradicted in DEIS **Appendix D** which ... *examined the MTBS data for any obvious temporal trends in wildfire severity, but did not detect a strong signal (**Figure D-6**). Over the course of 25 years, there appears to be a slight increase in the percentage of area burned by low and moderate severity wildfire, and a slight decrease in the percent of area burned in high severity wildfire, although these trends are not statistically significant. ... While several studies have indicated that high severity fires are increasing across the western United States (Westerling et al. 2006, Dillon et al. 2011a, Miller et al. 2012), no such trends were apparent in the observed record within the range of the northern spotted owl (**Figure D-6**).*

Response: The Proposed RMP/Final EIS has rewritten the relevant sentence from page 149 of the Draft RMP/EIS to make it clear that the information on page 149 and Appendix D of the Draft RMP/EIS do not contradict each other. The two passages address wildfire trends at different scales. The statement in the Draft RMP/EIS on page 149 refers to all forests in the entire State of Oregon, while Appendix D refers to fires within the range of the northern spotted owl. The Draft RMP/EIS also states that there are too few fires that have originated, either on BLM-administered lands or in western Oregon, to draw any conclusions on how fire severity and fire season severity may be changing (USDI BLM 2015, p. 149).

116. Comment Summary: DEIS (pp. 149–150) describes increasing stream temperatures as a result of climate change. The BLM needs to disclose the likely consequences on cold-water fish and other temperature-sensitive aquatic organisms.

Response: The Draft RMP/EIS identified the groups of species most vulnerable to climate change, including cold-water fish and other species with narrow temperature requirements (USDI BLM 2015, p. 157). The Draft RMP/EIS clearly described the effects of stream temperature on fish (USDI BLM 2015, pp. 232–233). Given the uncertainties associated with predictions of increasing stream temperatures, especially the interaction of increasing air temperatures and changes in stream shading (USDI BLM 2015, pp. 156–157, 232–233, 290–294), more detailed predictions of the consequences of climate change on cold-water fish and other temperature-sensitive aquatic organisms is not possible. The Proposed RMP/Final EIS has added discussion concerning the potential role of inner zones of Riparian Reserve (where thinning is restricted) in the action alternatives in providing climate refugia (see the Climate Change section of Chapter 3).

117. Comment Summary: The DEIS does not identify mitigation measures to address the likely effects of increasing spring precipitation on northern spotted owl nesting success.

Response: Mitigation is an important mechanism Federal agencies can use to minimize the potential adverse environmental impacts associated with their actions (CEQ 2011, p. 4). An EIS must identify all relevant and reasonable mitigation measures. (CEQ, "Forty Most Asked Questions …" 46 FR 18027). The commenter does not identify any specific relevant and reasonable measure that they believe would reduce or avoid the effect of increasing spring precipitation. Measures that would reduce greenhouse gas emissions or increase carbon storage would not be relevant and reasonable measures to reduce or avoid the effect of increasing spring precipitation; it is currently beyond the scope of existing science to identify a specific source of greenhouse gas emissions and designate it as the cause of specific climate impacts in a specific location. Thus, it would not be possible for the BLM to identify any relevant and reasonable measures to reduce or avoid the effect of increasing spring precipitation. Regardless of whether the BLM could identify such mitigation measures and evaluate their effectiveness, such measures would not be relevant to this RMP revision. The mitigation measures discussed in an EIS address the effects of the proposed action. Increasing spring precipitation is not an effect of the BLM action.

118. Comment Summary: The DEIS does not adequately address the current scientific understanding of the breadth of ways that anticipated climate change will alter the way we expect ecosystems to respond to forest management actions, particularly in regards to aquatic resources (e.g., see Dale *et al.* 2001, Dalton *et al.* 2013). Watershed resilience in the face of climate change can best be maintained by protecting and restoring the suite of natural processes and conditions that characterize natural forested riparian areas and floodplains (Seavy *et al.* 2009, Furniss *et al.* 2010). This is exactly what the ACS was originally designed to accomplish.

Response: The BLM analyzed the ways climate change may interact with BLM management actions in western Oregon, including water and aquatic resources, using the current scientific understanding (USDI BLM 2015, pp. 141–159). The spatial distribution and magnitude of future temperature and precipitation changes in the planning area are likely to be highly variable (Dalton *et al.* 2013). Shorter-term climate patterns are influenced by the Pacific Decadal Oscillation and El Niño-Southern Oscillation and deviate from longer-term trends (Dalton *et al.* 2013). As well, watershed characteristics (e.g., location, elevation, geology, vegetation, and dominant precipitation), lead to highly variable effects to a climate change trend. The commenter does not address the analysis of climate change in the Draft RMP/EIS or identify any errors or deficiencies in that analysis.

The commenter suggests that protecting natural processes and conditions within Riparian Reserve would lead to increased adaptability and resilience to climate change. The analysis in the Draft RMP/EIS has shown that the Riparian Reserve design and accompanying management direction under the alternatives would maintain resilient forested riparian areas in a managed landscape. Specifically, the Riparian Reserve would contribute to the conservation and recovery of ESA-listed fish species and their habitats; maintain and restore natural channel dynamics and processes and the proper functioning condition of riparian areas, stream channels, and wetlands; maintain high quality water (including Source Water Protection watersheds); and contribute to the restoration of degraded water quality.

The commenter suggests that the No Action alternative is the best strategy for maintaining watershed resilience in the face of climate change. Given that the BLM fully analyzed the No Action alternative in the Draft RMP/EIS, it is unclear how the commenter feels the Draft RMP/EIS did not adequately address watershed resilience in the face of climate change. Nevertheless, as shown by the analysis in the Proposed RMP/Final EIS (see the Fisheries and Hydrology sections of Chapter 3), the Proposed RMP would have effects on aquatic resources that would be similar to the No Action alternative.

Therefore, the Proposed RMP would provide a comparably effective strategy for maintaining watershed resilience in the face of climate change.

119. Comment Summary: The RMP/DEIS failed to analyze cumulative stream temperature (climate change) increases, which are due in part to logging. Past logging on O&C lands has measurably contributed to CO_2 pollution, thus triggering the required NEPA cumulative impacts of increased stream temperature. The DEIS/RMP failed to disclose the feedback loop of logging/increased CO_2 and resulting ongoing/future increased stream temperatures.

Response: The Draft RMP/EIS analyzed the effect of timber harvest under the alternatives on stream temperature (USDI BLM 2015, pp. 286–297) and acknowledged the potential future effect of climate change on stream temperatures (USDI BLM 2015, pp. 149–150). As explained in response to a similar comment below under Hydrology, it is not possible to forecast quantitatively how future riparian forest stand development would interact with increasing annual and seasonal air temperatures to affect stream temperature. The Draft RMP/EIS acknowledged that timber harvest creates greenhouse gas emissions, and that greenhouse gas emissions contribute to climate change (USDI BLM 2015, pp. 136–139, 141–142). However, it is not possible to ascribe any specific change in climate conditions to a specific emission of greenhouse gases. Furthermore, to the extent that past timber harvest in the decision area has contributed to changing climate conditions, the description in the Draft RMP/EIS of current condition and trend of climate conditions incorporates the effects of past timber harvests. As explained in the Draft RMP/EIS, the analysis generally relies on an aggregate description of the current condition and trend of resources, rather than delving into the historical details of individual past actions (USDI BLM 2015, p. 94). Finally, the commenter is incorrect in referring to ongoing increased stream temperatures. The Draft RMP/EIS explained that, in spite of predictions about potential future stream temperature increases, average maximum stream temperatures have generally been decreasing over the past decades (USDI BLM 2015, pp. 143, 293–294).

Fire and Fuels

120. Comment Summary: The BLM should revise the EIS to describe how actions are consistent with local and state fire protection plans and policies.

Response: The FLPMA requires that the BLM consider the policies of approved state and tribal land resource management programs and develop land use plans that are consistent with state and local plans to the maximum extent possible consistent with Federal law (43 CFR 1610.3–1). In this particular instance, the Oregon Department of Forestry's firefighting policy is to "Put out fires quickly at the smallest possible size" (http://www.oregon.gov/ODF/Fire/Pages/default.aspx, accessed January 14, 2016), whereas Federal Fire policy states that—

- The protection human life is the first priority and that no natural or cultural resource, home, or item of property is worth a human life.
- The full range of fire management activities will be used to help achieve ecosystem sustainability, including its interrelated ecological, economic, and social components.
- Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fires is based on ecological, social and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare,

natural and cultural resources, and, values to be protected, dictate the appropriate response to the fire (USDA and USDI 2009, p. 10).

As such, the Proposed RMP includes a management objective to participate with communities bordering Federal lands in partnership with local, State and Federal stakeholders to reduce the risks and threats from wildland fire. The Proposed RMP also includes management direction to apply the full range of fire management options in responding to natural ignitions or escaped prescribed fires. The BLM may use these fires to achieve management objectives when expected fire behavior and potential effects of a fire, or a part of a fire, are aligned with the management objectives and direction of the underlying land use allocation and affected resources (**Appendix B** – Management Objectives and Direction). This objective and direction in the Proposed RMP addresses the requirement of the FLPMA to develop land use plans consistent with State and local plans to the maximum extent consistent with Federal law.

The BLM added clarification to the Proposed RMP/Final EIS in the background of Issue 3 in the Fire and Fuels section to indicate that the BLM participates in the local and state fire protection plans, policies, and the Community Wildfire Protection Plan process.

121. Comment Summary: The BLM should revise the EIS to include different management objectives for the 'dry' and 'very dry' forest types for wildfire resiliency, given the projected climate patterns and the lifespan of the RMP.

Response: The BLM included management objectives for wildfire resiliency for dry and very dry forest types in the action alternatives and the Proposed RMP, and varied these objectives by varying the land use allocations in dry and very dry forest types. The BLM establishes management objectives for land use allocations and, as such, land use allocations that address dry forest management (e.g., Uneven-aged Timber Management and Late-Successional Reserve – Dry) provide variations to objectives that specifically address wildfire resiliency (**Appendix B** – Management Objectives and Direction).

The BLM classified forest types as dry and very dry based upon potential vegetation types and location (USDI BLM 2015, pp. 1002–1003). The BLM analyzed varying management objectives and applied differing management direction to dry and very dry forest types by varying land use allocation definitions of dry under the alternatives. For example, the Harvest Land Base allocates the Uneven-aged Timber Management under Alternative B to both dry and very dry forests, whereas Alternatives C and D only allocates the Uneven-aged Timber Area to very dry forests. The Proposed RMP allocates the Uneven-Aged Timber Management to both dry and very dry forests on the Medford District and Klamath Falls Field Office, and to very dry forests within the South River Field Office of the Roseburg District.

122. Comment Summary: Proposed BLM timber management in the DEIS will increase fire and fuel hazards in western Oregon forests. The proposal to increase even-aged, regeneration harvesting on public lands is irresponsible and will significantly increase fire/fuel hazards throughout western Oregon. The RMP admits that many of the alternatives provided in the DEIS will increase fire and fuel hazards by increasing logging slash, encouraging young age classes less resilient to fire.

Response: The commenter is mistaken. Based on analysis in the Draft RMP/EIS, all action alternatives would reduce the acres of High and Moderate fire hazard (USDI BLM 2015, p. 202). The commenter is also mistaken that the action alternatives would increase even-aged, regeneration harvesting. Compared to the No Action alternative, all of the action alternatives would reduce the

amount of regeneration harvest in the dry forests. The acres in activity fuel risk categories (USDI BLM 2015, pp. 209–211) provide an estimate of potential future work needed to reduce the risk associated with harvest activity fuels. Historically, the BLM has treated residual activity fuels following timber management activities for both site preparation and hazardous fuels reduction purposes. The commenter is mistaken in that many of the alternatives will increase fire and fuel hazards by increasing logging slash. As described in the Draft RMP/EIS, Alternatives B and C would result in more acres of activity fuels in the High risk category than the No Action alternative, and Alternatives A and D would result in fewer acres. All action alternatives would result in fewer acres of activity fuels in the Very High risk category than the No Action alternative (USDI BLM 2015, pp. 210–211). Furthermore, all alternatives include management direction to treat activity fuels, which would reduce the potential for activity fuels to contribute to fire hazard. The analysis of the Proposed RMP in this Proposed RMP/Final EIS confirms these results, and would result in trends described above similarly to Alternative B (see Chapter 3 Fire and Fuels Issues 3 and 4).

123. Comment Summary: The BLM should revise the EIS because it fails to address, adequately, the predictable increase in wildfire, pests, disease, and storm damage due to overcrowded forests in large block forests and Riparian Reserve. Alternatives that increase Reserve acreages will increase the risk of catastrophic wildfires by allowing more land to be unmanaged.

Response: The BLM does not agree that allocating lands to Late-Successional Reserve or Riparian Reserve will result in "overcrowded forests" or a "predictable increase in wildfire, pests, disease, and storm damage." The action alternatives and the Proposed RMP management direction in reserve land use allocations, especially in the dry forest, direct the BLM to manage stands to maintain landscape resilience and reduce the potential for uncharacteristic disturbances (**Appendix B** – Management Objectives and Direction). Management direction in the Proposed RMP includes direction to treat 21,500 acres per decade within Late-Successional Reserve – Dry. The Draft RMP/EIS specifically discusses analytic results for reserve management effects on fire resistance and fire hazard within Wildland Development Areas (USDI BLM 2015, pp. 195, 202, 1134–1135).

124. Comment Summary: Classifying the region's forests into dry and moist (DEIS, p. 178) has regionally specific biases. DellaSala *et al.* (2013) indicate that mixed evergreen forests experience mixed-severity fire regimes that cannot be classified using binary classifications systems. Classification uncertainty that was not accounted for in BLM's models needs to be discussed as using a simplistic binary classification will bias model outputs resulting in over-emphasis on thinning that could result in type conversions (DellaSala *et al.* 2013). BLM needs to represent the disagreement in the literature between Franklin and Johnson's (2013) approach (ecoforestry) vs. criticisms by DellaSala *et al.* (2013) as regional uncertainty and lack of scientific agreement.

Response: The Draft RMP/EIS extensively described the classification process for moist and dry forest delineations (USDI BLM 2015, pp. 179–180, 1002–1005). As explained in the Draft RMP/EIS, the process for moist and dry forest delineations included eco-typing conducted by regional resource experts and reviews of these classifications by local resource experts. In no way does this classification discount that mixed evergreen forests experience mixed-severity fire regimes. The Proposed RMP/Final EIS has expanded this discussion to acknowledge other types of vegetation classification systems.

125. Comment Summary: Fire models used in developing RMP alternatives should be approached with caution. The EIS is based on untested models (e.g., LANDFIRE, class condition mapping) that

have known over-prediction biases regarding high-severity fire. BLM applies TNC fire mapping built on LANDFIRE and fire regime condition class datasets that have not been ground truthed for prediction bias. Model uncertainty needs to be clearly specified in the FEIS. BLM's reference conditions need to be compared to back-casting and historical accounts of forests in order to be regionally appropriate and not based on a non-validated model. This needs to be corrected by BLM by including back-casting studies to help validate fire models (Whitlock 1992; Colombardi and Gavin 2010; Baker 2011, 2014; and Dipaolo and Hosten 2015).

Response: The BLM Fire Planning Handbook indicates that Land Use Planning must incorporate FRCC (Fire Regime Condition Class) or similar concept (USDI BLM 2012, pp. 2–6). As stated in the Draft RMP/EIS, the BLM built the analytic methods in Issue 1 upon the conceptual framework of the LANDFIRE Fire Regime Condition Class (FRCC) concept (USDI BLM 2015, p. 177). The Draft RMP/EIS discussed several model uncertainties and potential deficiencies as part of the analysis of fire resiliency (USDI BLM 2015, pp. 177–178, 1113–1126). As stated in the Draft RMP/EIS, the BLM base the natural range of variability on LANDFIRE Biophysical Setting models. These models are based on literature, local data, and expert estimate. Further descriptions and references for the biophysical setting models are located on the LANDFIRE Program website (http://www.landfire.gov/). Use of the LANDFIRE FRCC represents high quality information and follows specific policy direction outlined in the BLM Fire Planning Handbook. The Proposed RMP/Final EIS has expanded the discussion in the Summary of Analytical Methods in Issue 1 to include an acknowledgement of different positions on historic range of variability.

126. Comment Summary: The BLM should revise the EIS to include a lightning strike analysis to determine the risk of losing large blocks of habitat, and the contribution of these landscape features to an overall increase of wildfire risk across the landscape.

Response: The BLM did not conduct a lightning strike analysis, because it would not provide information necessary to make a reasoned choice between alternatives. The alternatives would have no effect on lightning strikes, and the BLM has no reasonable basis on which to evaluate different effects of lightning strikes under the alternatives. The Draft RMP/EIS included analysis to identify relative risks of large and high-severity wildfires, based on historic fire size, frequency, and severity, independent of wildfire ignition cause, to incorporate potential wildfire effects on northern spotted owl habitat (**Appendix H** – Fire and Fuels). This analysis includes the evaluation of lands for their relative suitability risk for wildfires, which gives a general sense of forest conditions and their locations within the planning area landscape that are most suitable for wildfires. The BLM incorporated predictions of fire size, location, and severity into the vegetation modeling.

127. Comment Summary: Higher fire severity increases the likelihood of transferring wildfire to adjoining forestland owners. The BLM should analyze fire severity across the landscape as a function of management direction under each alternative in the EIS. The State recommends the BLM should work with ODF to develop a high level metric to assess the overall potential transfer of wildfires between BLM and private lands.

Response: The Draft RMP/EIS analyzed the effects of the alternatives on fire resistance and fire hazard, as such; alternatives resulting in higher fire hazard or lower fire resistance would increase the likelihood of transferring wildfire to adjoining landowners. The BLM determined that at this scale and scope of analysis, general assumptions regarding forest structure and probable fire interaction provided a robust and consistent basis for comparing the effects of the alternatives at an appropriate scale. The Draft RMP/EIS did not analyze the effects of the alternatives on fire severity

directly, because such an analysis would require fine-scale, stand-specific data, particularly related to surface fuels and canopy base height changes over time by alternative, which is impractical at this scale of analysis. The BLM has clarified information pertaining to ownership patterns and transfer of risk in the Background of Fire and Fuels Issue 3.

128. Comment Summary: Fire risk should be a decision factor among components of alternatives. Simple metrics, such as acres treated, can give some rough estimates towards reducing fire risk and would be helpful in evaluating management components. With the information provided in the Draft RMP/EIS, it is difficult to assess the percentage of acres of dry forests that would be treated over the first decade.

Response: The Draft RMP/EIS did include information on acres treated relative to fire risk. The analysis described the acres in need of residual harvest activity fuels treatment, and estimated the acres of natural hazardous fuels treatments, activity fuels treatments, and silvicultural treatments by decade for each alternative (USDI BLM 2015, pp. 240–211, 212, 279–280). As concluded in the analysis, the size of the Harvest Land Base and the timber management type and intensity influence the amount of acres in each risk category by alternative. The acreage in activity fuels risk categories provides an estimate of potential future work needed to reduce the risk associated with activity fuels.

The purpose and need for the RMP revision includes restoring fire-adapted ecosystems by increasing fire resiliency, and the purpose and need noted that active management could positively influence fire risk (USDI BLM 2015, p. 10). As such, the BLM will consider how well the alternatives respond the purpose of increasing fire resiliency and will evaluate effects of the alternatives on fire risk in reaching a decision in the RMP revision.

129. Comment Summary: The BLM should revise the EIS to incorporate projections of climate change into fire behavior modeling.

Response: The Draft RMP/EIS discussed the potential effects of climate change on future wildfire behavior. The Draft RMP/EIS identified that most climate change projections indicate that wildfires are likely to get larger and more severe in the future. The Draft RMP/EIS explicitly explained why the vegetation modeling did not incorporate projections of the effects of climate change on future wildfire occurrence and severity. Specifically, the inherent challenges in predicting future stochastic events coupled with the uncertainties in climate change predictions make it impossible to forecast specifically when and where future wildfires would occur differently than they have occurred in the recent past (USDI BLM 2015, pp. 99, 1053–1055). The commenter does not address these explanations.

130. Comment Summary: The BLM should revise the EIS to prohibit salvage harvesting after wildfires. Unsalvaged, naturally regenerating stands subjected to high-severity fire should be maintained on the landscape to provide important habitat and stand development functions and be allowed to regenerate on their own. Logging is not the ecological equivalent to high-severity wildfire and salvage logging destroys the natural and biological legacies in post fire landscapes that allow for complex forest regeneration.

Response: The Draft RMP/EIS included varied approaches to salvage harvest after disturbances such as wildfire (USDI BLM 2015, pp. 41–74). Several action alternatives would prohibit salvage harvest in some land use allocations, except where necessary to protect public safety or to keep roads and

other infrastructure clear of debris. Under the Proposed RMP, salvage harvesting would be permissible to recover economic value or minimize economic loss only in the Harvest Land Base. The Proposed RMP would prohibit salvage harvesting in Riparian Reserve and Late-Successional Reserve, except where necessary to protect public safety or to keep roads and other infrastructure clear of debris.

An alternative that would prohibit salvage harvest on all lands, including the Harvest Land Base would not be reasonable because it would not respond to the purpose and need for the RMP revision. The Harvest Land Base has management objectives for sustained-yield timber production, which is how the alternatives respond to the purpose of the action to provide for a sustained yield of timber. It would be unreasonable to prohibit salvage harvest of timber after disturbances in a land use allocation dedicated to timber production.

131. Comment Summary: The BLM should revise the EIS to avoid post-fire logging in dense, mature/old forest stands that experience intense fire; as such, areas tend to provide the highest quality, and spatially rarest, complex early seral forest habitat (Swanson *et al*. 2011, DellaSala *et al*. 2014). The restoration of fire as a process should be a goal in these stands.

Response: The Proposed RMP would prohibit salvage harvest in Late-Successional Reserve, which includes older, structurally-complex conifer forest, except where necessary to protect public safety or to keep roads and other infrastructure clear of debris.

The Proposed RMP includes management objectives and management direction related to the management of fire as a process on the landscape, including management to restore and maintain ecosystem resilience to wildfire, including the application of prescribed fire, and responding to wildfires in a manner that provides for public and firefighter safety, while meeting land management objectives (**Appendix B** – Management Objectives and Direction).

132. Comment Summary: The BLM should revise the EIS because it fails to adequately address the direct, indirect, and cumulative impacts that post-fire salvaging has on post-fire logging feedback loops (i.e., whereby areas that burn in a fire are logged and planted with commercial species only to burn more intensely in the next fire, and then are logged again later).

Response: There is scientific controversy over the question of whether post-fire salvage harvest creates conditions that result in more intense re-burning. A recent publication found that post-fire logging reduced woody surface fuels up to four decades following a wildfire in Eastern Washington (Peterson, Dodson, and Harrod 2015). Alternatively, a study from the Klamath Region found that areas that had been salvaged-logged and then planted following the Silver Fire in 1987 burned more severely in 2002, relative to previously unmanaged areas (Thompson, Spies, and Ganio 2008). These researchers also found that following severe wildfire in this region, young vegetation is at increased risk of re-burning at high-severity, regardless of whether it has been managed. The Proposed RMP/Final EIS has expanded the discussion of this conflicting science and the BLM identifies how this scientific conflict influences the BLM's ability to predict resource impacts in the Fire and Fuels section of Chapter 3.

133. Comment Summary: The BLM should revise the EIS because all alternatives proposed fail to adequately address post-disturbance salvage (or fuels mitigation) as a viable alternative to reducing high-intensity fires on the landscape.

Response: All alternatives in the Draft RMP/EIS addressed post-disturbance salvage harvest and fuels treatments. The Draft RMP/EIS included varied approaches to salvage harvest after disturbances such as wildfire (USDI BLM 2015, pp. 41–74). The commenter does not identify an approach to post-disturbance salvage or fuels mitigation that they believe that the BLM did not analyze in the Draft RMP/EIS.

134. Comment Summary: The BLM should revise the EIS to integrate fish and wildlife habitat objectives and mitigation actions into fire restoration and rehabilitation programs and actions intended to manage fuels or salvage burned-over areas.

Response: The alternatives considered in the Draft RMP/EIS included management direction and Best Management Practices designed to integrate aquatic habitat objectives and northern spotted owl recovery objectives. Under all alternatives, the Riparian Reserve and Late-Successional Reserve incorporate direction for the management of fuels in a manner that is beneficial to habitat objectives (USDI BLM 2015, pp. Appendix B). Specific Best Management Practices, designed to meet water quality goals, apply to fire and fuels management actions, including those for fire restoration and rehabilitation (USDI BLM 2015, pp. Appendix I). The commenter does not identify an approach to integrating habitat objectives and fire restoration and rehabilitation that they believe that the BLM did not analyze in the Draft RMP/EIS.

135. Comment Summary: The BLM should revise the EIS to include partial salvage approaches in land use allocations. The Draft RMP/EIS presents a range of post-fire salvage options, both within the Harvest Land Base and the reserves, that largely either salvage or not within entire land use allocations. Application of 'partial salvage' approaches could be useful in optimizing ecological function, reducing fire transfer risk to adjoining lands, retaining access needs, and providing for firefighter safety in subsequent fire events.

Response: The Draft RMP/EIS included varied approaches to salvage harvest after disturbances such as wildfire (USDI BLM 2015, pp. 41–74). The commenter mischaracterizes the approach to salvage in the alternatives as "either salvage or not." Several action alternatives would prohibit salvage harvest in some land use allocations under some circumstances, and would direct salvage in some land use allocations under some circumstances. Under the Proposed RMP, salvage harvesting would be permissible to recover economic value or minimize economic loss only in the Harvest Land Base. The Proposed RMP would prohibit salvage harvesting in Riparian Reserve and Late-Successional Reserve, except where necessary to protect public safety or to keep roads and other infrastructure clear of debris.

136. Comment Summary: BLM needs to manage fire prevention on O&C lands to protect private land. The EIS needs to address more than just fire resilience, but also wildfire response—both in the context of active fire as well as post-fire restoration, harvest, and reforestation activities. Congress recognized that to avoid problems, the fire protection on O&C lands must be in conformity with the fire protection programs of the State of Oregon.

Response: The Draft RMP/EIS explained that the full range of wildfire response tactics would be available under all alternatives. Maintenance of fire suppression-related infrastructure would not change among alternatives. The ability to conduct salvage harvest for purposes of protecting human health and safety within the dry forest would be available under all alternatives. Because these factors

would not differ among the alternatives, there is no reasonable basis on which to identify a difference in the effect of the alternatives on wildfire response at this scale of analysis, beyond the effects to landscape-level fire resilience, stand-level fire resistance, and stand-level fire hazard (USDI BLM 2015, p. 212). The commenter does not address this explanation.

The Oregon Department of Forestry currently provides fire protection and prevention services on Western Oregon BLM-administered lands under the Western Oregon Fire Protection Services contract. All alternatives and the Proposed RMP would continue to manage wildfire response consistent with current Federal wildland fire policy (USDA and USDI 2009, USDI BLM *et al.* 2015).

137. Comment Summary: The BLM should create a land use allocation designating all areas that are wildland-urban interfaces and 'ownership perimeter zones' (within 1 mile of BLM forest boundaries) as 'fuels management emphasis areas.' Priority action should be taken to reduce the risk of fire by treating forests in this 'Fuels Management Emphasis Area.' This area would be managed to address the forest protection values of adjacent non-federal landowners (e.g., roads, wildfire, pests, etc.), and the impact of lacking BLM management on these neighboring non-federal lands.

Response: The BLM has not established a land use allocation designation specifically emphasizing fuels management. Across all land use allocations, the BLM has identified management direction to "create fuel beds or fuel breaks that reduce the potential for high-intensity fire spread within the wildland urban interface and in close proximity to other highly valued resources (**Appendix B** – Management Objectives and Direction.) This management direction applies to all alternatives. The alternatives did not create a separate land use allocation for fuels management because this management direction would be included in all land use allocations in the alternatives. In addition to this management direction, the analytic extents of Issues 3 and 4 in the Fire and Fuels section both emphasize BLM-administered lands within one mile from Wildland Developed Areas. The Proposed RMP/Final EIS expanded the discussion of ownership patterns within the Community Wildfire Protection Plan defined Wildland Urban Interface in the Proposed RMP/Final EIS.

138. Comment Summary: The Draft EIS failed to address a strategy to reduce the number of large fires or how the agency intends to reduce the number of acres burned.

Response: None of the alternatives in the Draft RMP/EIS specifically included a strategy to reduce the number of large fires or reduce the number of acres burned. As stated in the Draft RMP/EIS, there is no accurate way to predict the exact location and timing of wildfires, and there is no reasonable basis upon which the BLM could analyze how land management at this scale could affect the number of large fires or the number of acres burned (USDI BLM 2015, pp. 211–212). Instead, the purpose of the action includes improving the resilience and resistance of frequent fire systems, so that if, and when, fires do occur, there would be a lower likelihood that fire would substantially alter forest structure, composition, or function. The commenter does not suggest a specific strategy that they believe that the BLM did not analyze in the Draft RMP/EIS.

139. Comment Summary: Since no alternative has substantial decreases in high-severity fire risks, the RMP should include information regarding what additional actions are needed to substantially reduce high-severity fire risk.

Response: The Draft RMP/EIS analyzed in detail the effects of the alternatives on fire resiliency, fire resistance, wildfire hazard, and risk from activity fuels. The Draft RMP/EIS did not specifically

analyze the risk of high-severity fire directly, because such an analysis would require fine-scale, stand-specific data, particularly related to surface fuels and canopy base height changes over time by alternative, which is impractical at this scale of analysis. The Draft RMP/EIS concluded that all alternatives would increase stand-level fire resistance and reduce wildfire hazard on BLM-administered lands compared to current conditions. The commenter does not identify any additional alternatives that they believe that the BLM should have analyzed in the Draft RMP/EIS.

140. Comment Summary: BLM needs to work with USFS to implement a cohesive wildland fire management strategy that allows more fires to burn unimpeded in the back country to reduce widespread damage to ecosystems from extensive and often ineffective fire suppression (see Ingalsbee and Roja 2015).

Response: Currently, the Oregon Department of Forestry provides wildfire protection services on BLM-administered lands, and operates in an inter-agency capacity with the U.S. Forest Service for border fires, via the Southwest Oregon Interagency Fire Management Plan (USDA FS, USDI BLM, ODF, and USDI NPS 2014). None of the alternatives would alter the inter-agency working relationships with State or Federal agencies in wildfire response coordination. For management on BLM-administered lands, the alternatives include management direction that would allow the use of natural fire to meet resource objectives (**Appendix B** – Management Objectives and Direction).

141. Comment Summary: The RMP addresses fire issues using fundamentally flawed forestry management science. The RMP/DEIS fire and fuels treatments are based on faulty premises, instead of evolutionary fire science and understanding of natural fire regimes from which native plants and animals evolved and of their importance to sustain natural community ecosystems. The approach to fire in all alternatives perpetuates unsustainable and destructive timber industry driven forestry management paradigm. BLM's RMP shows inherent biases reflected in the partial treatment of fire as a threat that needs suppression via mechanical treatments.

Response: The alternatives considered in the Draft RMP/EIS would allow that all natural ignitions can be managed with the full suite of fire management options (**Appendix B** – Management Objectives and Direction), including using fire to meet resource and land use objectives, when and where conditions might allow. Nevertheless, all alternatives also provide for a continuing need for wildfire suppression and fire risk mitigation, given the checkerboard land ownership pattern and that large portions of the decision area lie within 1 mile of human developed areas (USDI BLM 2015, pp. 197–200). The commenter does not specifically identify what forestry management science used in the Draft RMP/EIS that they believe is flawed.

142. Comment Summary: The EIS needs to include a more comprehensive literature review that includes the ecosystem benefits of mixed-severity fires, studies relevant to the region's fire regimes or forest types, the importance of complex early seral forests and their association with future late-successional stand development. BLM's fire science synthesis and Draft RMP/EIS do not provide a comprehensive literature review on the ecological importance of mixed-severity fires in maintaining fire-dependent biodiversity and complex early seral forests (Swanson *et al.* 2011, DellaSala and Hanson 2015); the complex pattern of fire-vegetation mosaics in this region is associated with high biodiversity (Odion *et al.* 2010, Donato *et al.* 2012, DellaSala and Hanson 2015) and complex early seral forests (Swanson *et al.* 2011); heterogeneity in fire behavior is an inherent and resilient property of mixed evergreen forests undervalued by BLM. This critically important natural heterogeneity

needs to be recognized in the Proposed RMP/Final EIS for its biodiversity benefits and not just risks to ecosystems.

Response: A literature review of heterogeneity in fire behavior in mixed evergreen forests is not necessary to understand the potential impacts of the alternatives on fire resiliency, fire resistance, wildfire hazard, and risk from activity fuels. The BLM has not included such a literature review in keeping with CEQ direction that environmental analyses should not be encyclopedic in nature but should focus on the information relevant to the decisions to be made (40 CFR 1500.4). The BLM has reviewed the materials referenced. One reference (Donato *et al.* 2012) had been included in the Draft RMP/EIS (USDI BLM 2015, p. 175), and the Proposed RMP/Final EIS has included several of the additional referenced citations where applicable to the planning area and issues being analyzed.

143. Comment Summary: BLM's fire synthesis lacks a discussion of uncertainty related to thinning efficacy in mixed-severity systems (see Odion *et al.* 2014a, DellaSala and Hanson 2015) and the EIS should recognize that fuel reduction efforts have limits including: the probability that a treated area will intersect a fire is very small (5–8 percent, Rhodes and Baker 2008); thinning is ineffective during extreme fire behavior, which may increase over time due to climate change (Littell *et al.* 2009); extensive thinning can contribute to fire spread by opening forest stands to increase wind penetration, increased light levels and associated plant growth, and increases in fuel loadings left by thinning slash. BLM creates the expectation (without quantifying uncertainty or at least reporting on model biases) that thinning will reduce fire intensity in mixed-severity fire regimes that are mainly climate driven fire events. The lack of a uncertainty discussion in the fire section of the Draft RMP/EIS and supporting appendix, and BLM's treatment of thinning as fire remediation, runs counter to several studies in the region that were not discussed (e.g., Odion *et al*. 2004, Thompson and Spies 2007, Hanson *et al*. 2009, Odion *et al*. 2010, Odion *et al*. 2014a).

Response: The Draft RMP/EIS acknowledged that extreme weather, drought, and prevailing climatic conditions have the ability to result in unexpected and extreme fire behavior, regardless of forest structure (USDI BLM 2015, p. 188). The Draft RMP/EIS also discussed the potential effects of open stands on fuels and fire behavior, including increased drying and surface winds (USDI BLM 2015, pp. Appendix H). Issue 4 of the Fire and Fuels section analyzed the increased wildfire risk that activity fuels can potentially pose, if they go untreated. The BLM has incorporated additional discussions of uncertainty regarding effectiveness of thinning and fuels treatments in the Proposed RMP/Final EIS in the Current Fire Climate Environment and Future Trends section of Chapter 3**.**

The BLM reviewed the materials referenced. While several of the references are regionally relevant, the literature referenced largely refers to the effects of even-aged management (plantations and salvage harvest and rapid reforestation) on resulting fire severity, thus providing information related to certain types of treatments and forest structure and resulting fire interactions. The BLM has incorporated several of these citations in reference to these types of treatments and forest structure. Unfortunately, the planning area does not have any regionally specific studies that specifically examine the effectiveness of fuels reduction treatments, including uneven-aged management or non-commercial thinning and prescribed burning, on resulting fire severity and fire behavior. As stated, a wildfire intersecting a fuels treatment is a relatively rare occurrence. However, over the past few years, there have been several opportunities, locally (Douglas Fire Complex, Twincheria Fire, Worthington Road Fire, Stratton Fire, Speaker Road Fire, Reeves Creek Fire, and several more), to observe compelling anecdotal evidence of these types of treatments moderating the fire behavior and fire effects when intersected by wildfires. The Proposed RMP/Final EIS has added expanded discussions of the effects of stand treatments on fire behavior and fire effects.

144. Comment Summary: For the Klamath-Siskiyou ecoregion, plantations burned in twice as much high severity area compared to natural forests (Odion *et al.* 2004). The influence of plantation management on fuel structure and fire severity needs to be included to present a more complete and regionally specific review of the pertinent literature. BLM needs to include the relevant regionally specific study (Odion *et al.* 2004) that documented greater high severity acres in plantations and contrast complex early seral with early seral produced by forestry for this table to be based on best science. Additionally, long-unburned areas with closed forest canopies in mixed evergreen forests of this region support more low severity fire than recently burned areas (Odion *et al.* 2004).

Response: The Draft RMP/EIS did reference Odion *et al.* (2004) and incorporated the findings of plantations burning at high fire severity and multi-layered closed canopy forest burning at low fire severity in the analytical assumptions (USDI BLM 2015, pp. 193, 197, 1127–1128).

145. Comment Summary: The Draft RMP/EIS does not include relevant peer-reviewed studies that have shown no recent (since 1984) increases in acres burned or fire severity in this region (see Hanson *et al.* 2009, Odion *et al.* 2014 a, b). The discussion of presumed recent increases in fire extent/severity (p. 176) is based on a citation to an industry document (OFRI) and BLM's prior WOPR and to an analysis by Westerling *et al.* (2006) that did not show an increase in fire severity nor is it appropriate to this region. Industry citations are not peer reviewed documents and neither is the BLM's prior WOPR – BLM needs to rectify the omission of regionally-specific peer-reviewed literature that runs contrary to BLM's assumptions.

Response: It is not clear how the commenter believes the cited literature "runs contrary to BLM's assumptions." The commenter cites studies to support the assertion that there has been no recent increase in acres burned or fire severity since 1984. While the Draft RMP/EIS acknowledged studies that the frequency of large fires and the acre burned have increased across the West and in Oregon, the Draft RMP/EIS modeled future wildfires based on the regional wildfire history from 1970 to 2013 (USDI BLM 2015, pp. 1045–1056). That is, the Draft RMP/EIS did not project forward any increase in acres burned or fire severity compared to the past four decades. The Draft RMP/EIS specifically acknowledged the uncertainty around trends related to fire severity and made no attempt to incorporate predictions of increased future fire severity (USDI BLM 2015, pp. 1050–1051). The BLM has reviewed the references identified and did not cite Hanson *et al*. (2009) or Odion *et al*. (2014 a/b), because they do not add any relevant information, given that the BLM has already concluded that there is no statistically significant trend in fire severity to incorporate into the wildfire modeling.

146. Comment Summary: The Fuels and Fire section's "Affected Environment" section for Issue 1 (p. 182) states there is a slight overabundance of early seral without contrasting early seral produced by industrial forestry vs. that produced by natural disturbances. There are documented differences in habitat quality between the two that need discussion (see Swanson *et al.* 2011, DellaSala *et al.* 2014). Additionally, Figure 3-33 lacks acreage value for early seral.

Response: The BLM has added discussion to the Proposed RMP/Final EIS that clarifies the seral-stage classification is based on structure and does not necessarily represent a functioning ecological state. The BLM has carried this acknowledgement into Issue 1 in the Fire and Fuels section of Chapter 3. The Proposed RMP/Final EIS corrected an error in the early seral acreage in **Figure 3-33** in the Draft RMP/EIS.

147. **Comment Summary:** The Draft RMP/EIS (p. 186) only mentions fire exclusion as resulting in departure from reference condition. The BLM needs to discuss how timber management has increased departure from reference conditions as well. BLM's lack of discussion on timber impacts in this section is not based on best science.

Response: The Draft RMP/EIS acknowledged that land management practices, such as timber management, combined with fire exclusion, have resulted in stands that are overly dense and missing large, fire-resistant trees (USDI BLM 2015, p. 175).

Fisheries

148. **Comment Summary:** Unexplained in the DEIS is the scientific basis for concluding that the proposed, substantially smaller Riparian Reserve and the proposed increased timber harvest activities within the smaller Reserves are sufficient for the needs of salmon and other riparian-dependent species.

Response: The Draft RMP/EIS does not make any comprehensive conclusion about whether the Riparian Reserve designs in the action alternatives are "sufficient for the needs of salmon and other riparian-dependent species." The Draft RMP/EIS provides analytical conclusions regarding the comparative effect of the alternatives related to specific issues. A conclusion about whether such effects constitute a management approach that is "sufficient for the needs" of ESA-listed fish is appropriately addressed through the ESA consultation process.

The commenter incorrectly states that the Draft RMP/EIS is making a conclusion about the sufficiency of the management approach for "other riparian-dependent species." As explained in the Draft RMP/EIS, none of the action alternatives in the Draft RMP/EIS includes the Aquatic Conservation Strategy in its entirety, as found in the No Action alternative, which included an objective of supporting well-distributing populations of riparian-dependent species, based on the U.S. Forest Service organic statute and implementing regulations (USDI BLM 2015, pp. 22–23). The BLM has not included a management objective for the Riparian Reserve based on the needs of all "riparian-dependent species," but has included objectives consistent with BLM laws, regulations, and policy.

Effects analysis in NEPA documents must demonstrate that the BLM took a 'hard look' at the effects of the action. A 'hard look' is a reasoned analysis containing quantitative or detailed qualitative information (USDI BLM 2008, p. 55). The Draft RMP/EIS includes a detailed and quantified analysis of the effect of the alternatives on wood supply to streams, sediment delivery to streams, stream temperatures, and peak water flows (USDI BLM 2015, pp. 219–233, 286–318). That analysis demonstrates that, for each of these issues, some or all of the action alternatives would result in effects that are equally protective of ESA-listed fish and water quality as the No Action alternative. The analysis in the Draft RMP/EIS contains quantitative information on the significant effects on ESA-listed fish at issue and interprets that information to form analytical conclusions about the comparative effects of the alternatives. That analysis constitutes a 'hard look' and provides the scientific basis for evaluating the effects of the alternatives on ESA-listed fish and water quality.

In a December 18, 2015 letter from NMFS to the BLM, NMFS acknowledged that these comments misinterpreted the Draft RMP/EIS and asked that the comments be ignored. NMFS clarified that they believe that the approach in the Northwest Forest Plan is not the only approach that would ensure the

protection and recovery of threatened and endangered fish, and that the best available science also supports an approach modified from Alternative A or D that includes a one site-potential tree height Riparian Reserve on fish-bearing streams and perennial streams.

149. Comment Summary: The DEIS should disclose the potential consequences of reducing aquatic resource protections for other agencies and conservation and land management efforts.

Response: The commenter's assertion that all action alternatives would reduce aquatic resource protection is without foundation and contrary to the analytical conclusions in the Draft RMP/EIS. The reduction in Riparian Reserve buffer size on some streams in the action alternatives does not directly equate to adverse effects on ESA-listed fish or water quality. The analysis in the Draft RMP/EIS demonstrates that, for each of the significant issues affecting ESA-listed fish and water quality, some or all of the action alternatives would result in effects that are as equally protective of ESA-listed fish and water quality as the No Action alternative (USDI BLM 2015, pp. 217–235, 286–320). Therefore, all of the alternatives have the ability to fulfill the BLM's present role in coordinating conservation and land management efforts with other agencies. The commenter provides no basis for the assertion that other agencies' efforts would be less effective under any of the action alternatives.

150. Comment Summary: The DEIS asserts (p. 225) that there will be no difference in large wood production among the alternatives. This assertion is clearly in error, for reasons discussed below, but it is also problematic because the basis for this statement was based on the obscure and poorly described wood modeling exercise performed as part of the 2008 WOPR FEIS (which was subsequently withdrawn, in part due to extensive criticism as to its technical merits).

Response: The commenter mischaracterizes the assertion in the Draft RMP/EIS, which states, "There is no meaningful difference discernible at this scale of analysis among the alternatives in their effect on potential wood contribution" (USDI BLM 2015, p. 225; emphasis added). The Draft RMP/EIS further acknowledges, "There are differences in the design of the alternatives that may have differential effects on potential wood contribution that the BLM cannot quantitatively evaluate at this scale of analysis." The Draft RMP/EIS proceeds to address qualitatively the specific differential effects that the alternatives could have on potential wood contribution based on Riparian Reserve widths, inner zone widths, and management direction for Riparian Reserve thinning (USDI BLM 2015, pp. 228–230). The commenter does not acknowledge or address this discussion of the specific differential effects that the alternatives could have on potential wood contribution. In a December 18, 2015 letter from NMFS to the BLM, NMFS acknowledged that these comments misinterpreted the Draft RMP/EIS and asked that the comments be ignored.

The commenter mistakenly asserts that the "2008 WOPR FEIS" was withdrawn because of "extensive criticism as to its technical merits." The Secretary of the Interior withdrew the Records of Decision for the 2008 FEISs in July 2009, because the approval of the Records of Decision was in 'legal error' because the BLM had not conducted Section 7 consultation under the ESA. In withdrawing the Records of Decision, the Secretary raised no question about the technical merits of the EIS on which the 2008 FEIS Records of Decision were based, and the Secretary did not withdraw the EIS. Subsequent to the withdrawal by the Secretary, the Court in *DTO v. Salazar* found that the Secretary's decision to withdraw the Records of Decision was arbitrary, capricious, and an abuse of discretion. In *Pacific Rivers Council et al. v. Shepard*, the Court vacated the 2008 FEIS Records of Decision, again because the BLM had not completed Section 7 consultation under the ESA, without mention of the technical merits of the EIS on which the 2008 FEIS Records of Decision were based.

Thus, neither the Secretary nor the Court raised any question about the technical merits of the EIS on which the 2008 FEIS Records of Decision were based.

Furthermore, the commenter suggests that the BLM cannot use analytical information from the 2008 FEIS. It is appropriate for the BLM to rely on information in the 2008 FEIS to the extent it provides high quality information relevant to the analysis for this RMP revision. The CEQ regulations direct agencies to incorporate such information by reference (40 CFR 1502.21). The BLM NEPA Handbook explains that the BLM can incorporate any such information by reference if the information is reasonably available for public inspection (USDI BLM 2008, p. 26). The analysis in the 2008 FEIS does provide high quality information relevant to this analysis and is available for public inspection. Thus, it is appropriate for the Draft RMP/EIS to incorporate that information from the 2008 FEIS by reference.

151. Comment Summary: Assertions that thinning will improve habitat conditions should be viewed cautiously and with skepticism. The burden of proof should remain on thinning proponents that thinning is likely to accelerate attainment of conservation goals.

Response: RMPs establish management direction to accomplish the management objectives, as directed in the BLM planning handbook (USDI BLM 2005, pp. 11–13). Actions implementing the RMP must be in conformance with the RMP; this means that the action is specifically provided for in the RMP, or if not specifically mentioned, shall be clearly consistent with the terms, conditions, and decisions of the approved plan (43 CFR 1601.0–5(b)). That is, the BLM may take actions if the actions are specifically directed in the management direction or clearly consistent with the management direction of the approved RMP.

The 1995 RMPs directed the implementation of those silvicultural activities (such as thinning) "...needed to attain Aquatic Conservation Strategy objectives." This required a test of any such management actions as thinning against broad-based ecological goals. This approach of testing implementation actions against management objectives was generally inconsistent with the BLM planning process. As a result, the requirements in the 1995 RMPs unnecessarily confused decision-making for thinning in Riparian Reserve by requiring testing site-specific projects against broad and aspirational goals at multiple spatial scales.

In contrast, the Proposed RMP and all action alternatives provide specific management direction regarding where and under what circumstances to thin stands in the Riparian Reserve (**Appendix B** – Management Objectives and Direction). The evaluation of proposed thinning in the Riparian Reserve under the Proposed RMP or any action alternative would be solely a test of conformance with the applicable management direction. Under the Proposed RMP and all action alternatives, there would be no "burden of proof" related to thinning in the Riparian Reserve beyond evaluating whether the action would be consistent with the management direction (as with all implementation actions), and there would be no test of such thinning against "attainment of conservation goals." The BLM would evaluate whether implementation actions would be successfully accomplishing management objectives in effectiveness monitoring of the RMP (**Appendix V** – Monitoring Plan for the Proposed RMPs).

152. Comment Summary: The RMP needs to include a complete evaluation of how artificial fertilizer will influence water resources, anadromous fish, and critical habitat.

Response: Under all alternatives, the BLM would not apply fertilizer in the Riparian Reserve. The Proposed RMP has added specific management direction that would preclude aerial application of fertilizer (**Appendix B** – Management Objectives and Direction). The Riparian Reserve would provide sufficient nutrient filtering to ensure that any fertilizer application in the Harvest Land Base would not have any significant effect on water resources, anadromous fish, or designated critical habitat for fish as discussed in the Fisheries and Hydrology sections of Chapter 3.

153. Comment Summary: Analysis is needed to address the special needs of streams and cold water fish in the Medford BLM District where the dry forest classification dominates.

Response: The potential effects of the alternatives on fish in the dry forest do not differ from the other portions of the decision area. The relevant issues for analysis of effects on fish relate to wood supply to streams, sediment delivery to streams, and stream temperature. The Draft RMP/EIS analyzed these effects similarly in the dry forest as in the rest of the decision area. The commenter does not identify any error in that analysis or any significant effect on fish not addressed in that analysis.

154. Comment Summary: There is very little information regarding the shortnose and Lost River suckers in the DEIS.

Response: The Proposed RMP/Final EIS has added information on the Lost River and shortnose suckers within the planning area (see the Fisheries section in Chapter 3). There is no Lost River sucker critical habitat on or adjacent to BLM-administered lands in the planning area. Approximately 9 miles (7 percent) of shortnose sucker critical habitat is adjacent to BLM-administered lands in the planning area and 1,076 acres adjacent to BLM-administered lands, primarily around the Gerber Reservoir in the Klamath Falls Field Office.

155. Comment Summary: The RMP/DEIS inadequately mapped the linear extent of critical habitat for federally listed fishes. Critical habitat helps focus Federal, tribal, state, and private conservation and management efforts in such areas. Management efforts may address special considerations needed in critical habitat areas—including conservation regulations that restrict both private and Federal activities.

Response: In conducting the analysis and in designing the alternatives, the BLM used datasets provided by the NMFS and BLM datasets on fish presence to map fish-bearing streams and streams with critical habitat for ESA-listed fish. The BLM used the NMFS data on critical habitat specifically in the design of the subwatershed classes in the Proposed RMP (see Chapter 2). The Proposed RMP/Final EIS has included maps of critical habitat in **Appendix I** – Fisheries.

156. Comment Summary: The RMP/DEIS fails to disclose that supposedly 'fishless' stream channels actually provide an important habitat. This could allow more intensive logging practices in areas that do not contain fish. The RMP/DEIS fails to identify the need to map these critical habitats as 'fish' streams.

Response: The BLM acknowledges that streams that appear to be non-fish-bearing streams can provide important habitat under some circumstances, and that non-fish-bearing streams are important components of the stream network, affecting downstream fish habitat. Under all action alternatives

and the Proposed RMP, the Riparian Reserve is the same for fish-bearing perennial streams, fish-bearing intermittent streams, and non-fish-bearing perennial streams. Therefore, all streams that could provide habitat for fish would receive the same level of protection under all action alternatives and the Proposed RMP.

157. Comment Summary: The RMP/DEIS failed to analyze migration barriers to federally listed fishes. The RMP/DEIS has no plan for the removal of coho passage barriers. The RMP/DEIS fails to provide a schedule for removing priority coho passage barriers within the decision area and fails to provide coordinated actions with 'partners' to remove coho passage barriers within the planning area.

Response: The Analysis of the Management Situation specifically described the fish passage barriers in the planning area, their effect on fish populations, and the effect of removal of these barriers on fish populations (USDI BLM 2013, p. 36). The Draft RMP/EIS incorporated that discussion by reference (USDI BLM 2015, p. 219). There is no reasonable basis on which the BLM could forecast a difference among the alternatives or the Proposed RMP in the future removal of fish passage barriers.

All alternatives include management direction to remove or replace culverts that currently block fish passage with culverts that pass fish and aquatic organisms at a range of flows. Removal of passage barriers is an important component of watershed restoration. The Proposed RMP/Final EIS has added discussion of how the BLM would implement watershed restoration under the Proposed RMP (**Appendix X** – Guidance for the Use of the Completed RMPs). Specifically, the BLM will use the BLM Western Oregon Aquatic Restoration Strategy in determining priorities for watershed restoration. The BLM Western Oregon Aquatic Restoration Strategy presents a restoration strategy that uses a combination of habitat based intrinsic potential modeling and professional field knowledge to focus restoration efforts in areas deemed likely to have the highest production potential for fish species of interest.

Although the BLM can coordinate with adjacent landowners in implementing restoration strategies, directing the removal of passage barriers on other land ownerships is not within the BLM's authority and not within the scope of the RMP.

158. Comment Summary: The DEIS/RMP failed to identify locally relevant management direction, specific management objectives for critical habitat, and site specific interagency coordination needed to recover bull trout.

Response: The Proposed RMP/Final EIS has expanded the discussion of bull trout in the decision area (see the Fisheries section of Chapter 3). A total of 3.6 miles of bull trout critical habitat occur within the decision area, comprising less than 0.1 percent of bull trout critical habitat. Bull trout are affected by the same key ecological processes as the ESA-listed anadromous salmonids in the decision area, allowing them to be analyzed together at this scale of analysis.

159. Comment Summary: Beaver activity increases coho production and needs to be addressed.

Response: The BLM agrees that beaver activity can improve habitat conditions for coho salmon. Riparian restoration treatments adjacent to coho salmon streams would promote forage and building material by enhancing streamside hardwoods and vegetation diversity. The Proposed RMP has added management direction to promote beaver habitat restoration in the Riparian Reserve (**Appendix B** – Management Objectives and Direction).

160. Comment Summary: The RMP alternatives failed to analyze impacts to the green sturgeon in their analysis.

Response: Because of the very limited distribution of the southern DPS of green sturgeon in the decision area, the BLM would have very limited ability to affect these fish through land management actions. The Proposed RMP/Final EIS has added information regarding the distribution of the southern DPS of green sturgeon and its critical habitat relative to BLM-administered lands and potential effects in the Background of the Fisheries section in Chapter 3.

161. Comment Summary: The DEIS/RMP fails to adequately describe how the cumulative effects of logging, roads, and other disturbances caused by timber operations have depleted large wood in streams and depleted future sources of large wood for 100 years or more.

Response: The Draft RMP/EIS summarized the effect of past actions on large wood in streams and the future sources of large wood (BM 2015, pp. 222–223). The Proposed RMP/Final EIS has expanded the discussion of the effects of past actions on large wood in streams and the future sources of large wood by incorporating by reference background information from the Analysis of the Management Situation (USDI BLM 2013, pp. 32–36) and the 2008 FEIS (USDI BLM 2008, pp. 372–390) regarding key ecological processes affecting fish population and aquatic ecosystems.

162. Comment Summary: The RMP/DEIS does not provide for streambed stability monitoring.

Response: The Proposed RMP/Final EIS includes a monitoring plan for the Proposed RMP in **Appendix V** – Monitoring Plan for the Proposed RMPs, which specifically states that the BLM would continue to rely on the existing interagency effectiveness monitoring modules to address key questions about whether the RMP is effectively meeting the objectives. The aquatic and riparian effectiveness monitoring program measures in-channel attributes, which provides a basis for evaluating streambed stability (**Appendix V** – Monitoring Plan for the Proposed RMPs).

163. Comment Summary: The RMP/DEIS fails to assess the cumulative effects of decreased summer flows in coho critical habitat.

Response: The Proposed RMP/Final EIS has added discussion explaining that the effects on low water flows are an issue that the BLM considered but did not analyze in detail. Given the no-harvest Riparian Reserve along streams and the limited extent of the Harvest Land Base under all alternatives, there is no reasonably foreseeable effect of harvesting outside of Riparian Reserve on low water flows (see the Hydrology section of Chapter 3). Given that none of the alternatives would have a reasonably foreseeable effect on low water flows, there is no need for an analysis of the cumulative effects of other action on low water flows.

164. Comment Summary: The RMP/DEIS does not address the cumulative effects of mining on coho habitat.

Response: The Proposed RMP/Final EIS has added discussion of the potential effects of mining on fisheries (see the Fisheries section of Chapter 3).

Forest Management

165. Comment Summary: The BLM should revise the EIS because it applies the wrong definition of 'sustain' to timber harvest calculations. The EIS applies the definition as "supply, support, or nourish." The intended meaning of 'sustain' in the O&C Act is to "preserve, maintain, and prolong in a conservation context."

Response: The Draft RMP/EIS appropriately applied the definition of "sustain" in the context of forest management for a sustained yield of timber as directed under the O&C Act (**Glossary**). Sustained yield is a forestry term that defines the level of timber harvesting that can take place on a forested area in perpetuity, at a given intensity of management; in other words, the level of timber harvest that can be maintained over time.

Therefore, complying with the principles of sustained yield requires the BLM to verify mathematically that timber harvest levels will not decline over time due to overcutting practices. For the Proposed RMP and alternatives, the BLM has modeled a repeated cycle of harvest and regrowth that does not decrease over time (**Appendix C** – Vegetation Modeling, for more details on methodology). The BLM has applied the definition of sustained yield as intended under the O&C Act: to provide for a maintainable level of harvest, guarding against the overcutting that the O&C Act sought to end.

166. Comment Summary: The BLM should revise the EIS to distribute harvest levels and annual sale quantities (ASQs) evenly throughout the entire decision area.

Response: In accordance with the O&C Act, the BLM calculated a sustained-yield level for each of the six designated sustained-yield units, which currently correspond with the boundaries for Coos Bay, Eugene, Medford, Roseburg, and Salem Districts, and the area west of Highway 97 in the Klamath Falls Field Office. Inputs into this calculation include the inherent timber productivity of the land, current timber inventories, intensity of timber harvest, and areas reserved from timber harvest to help meet BLM's obligations under the Clean Water Act and the Endangered Species Act, among other laws, as well as meet the purpose and need for the action and the management objectives described in the alternatives. The annual sustained yield of timber calculation is an output of these various input factors and, because of differences in forest ecosystems and differences in approaches to meeting other laws, the result is different sustained-yield volumes in each sustained-yield unit.

167. Comment Summary: The BLM should revise the EIS to allow for on-site discretion when selecting modern harvesting methods rather than limiting them beforehand. The EIS should also allow road building where necessary for efficient operations, and reduce the reliance on more expensive helicopter logging.

Response: The BLM agrees that many harvesting decisions are best informed based on site-specific information. The action alternatives do provide management direction that directs and restricts harvesting methods, such as requiring a range of green tree retention levels or a suite of harvesting techniques. The BLM has developed these restrictions as necessary to comply with the guidance in the RMP revision, which directed that all action alternatives provide a high degree of predictability and consistency about implementing land management actions (USDI BLM 2015, p. 12).

Nevertheless, the BLM disagrees that management direction developed at this planning level would unreasonably restrict site-specific decisions to select harvest methods and logging methods prior to project implementation. The Proposed RMP allows wide discretion on harvest methods employed and includes a comprehensive set of Best Management Practices that BLM timber sale planners can use to customize contract stipulations to site-specific conditions. The Proposed RMP also directs the BLM to allow new road construction based on operational needs (**Appendix B** – Management Objectives and Direction, **Appendix J** – Best Management Practices). Helicopter (aerial) yarding will continue to be required in certain circumstances based on site-specific information, as the BLM implements the RMP; however, the BLM would identify yarding methods based on site-specific review during implementation project planning and not on determinations made at this larger-scale of analysis.

168. Comment Summary: The BLM should revise the EIS because the BLM uses subjective terms to describe logging intensity without providing data or literature to support classifications. Retaining 5–15 percent of the forest in a cut block is more extreme than moderate. The BLM provides no basis for quantifying how these intensities relate to wildlife impacts, soil, hydrology, cumulative effects, fire risks, etc. What the BLM classifies as low intensity in owl habitat has no basis in any literature on intensity of effects of logging on the northern spotted owl.

Response: The BLM chose to label Harvest Land Base sub-allocations in the Draft RMP/EIS conceptually, describing the management approaches in each relative to each other. The Harvest Land Base sub-allocation names listed in order of intensity from highest to lowest follow: High Intensity Timber Area (0 percent retention clearcuts), Moderate Intensity Timber Area (5–15 percent retention variable-retention regeneration harvest), Low Intensity Timber Area (15–30 percent retention variable-retention regeneration harvest), Uneven-aged Timber Area (fire resiliency uneven-aged management), and Owl Habitat Timber Area (owl habitat uneven-aged management). The BLM does not use these labels to inform analysis of environmental impacts, only to distinguish one sub-allocation from another.

169. Comment Summary: The BLM should revise the EIS because variable-retention or clearcutting on BLM lands is not necessary to create complex early successional habitat, since natural disturbances have been creating this sort of habitat in abundance. Leaving burned areas unsalvaged and unplanted would provide all of the complex early seral habitat necessary, and therefore clearcutting is not needed.

Response: The range of alternatives in an EIS for an RMP must present reasonable alternatives to accomplishing the stated purpose and need for action. The Draft RMP/EIS evaluated a variety of management intensities within the Harvest Land Base in the action alternatives in order to evaluate tradeoffs related to timber production and forest structural development, along with other environmental effects. As explained in the Forest Management section in Chapter 3, the higher intensity management practices tend to produce higher levels of sustained-yield timber production on a given acre of timberland.

All of the action alternatives include either variable-retention harvest or clearcutting on some portion of the decision area, to achieve a variety of purposes. All action alternatives would apply either variable-retention harvest or clearcutting to produce timber to contribute to the attainment of the Allowable Sale Quantity (USDI BLM 2015, pp. 276–280). Alternatives B and D include producing complex early successional ecosystems as one of several purposes for applying variable-retention harvest (USDI BLM 2015, pp. 949, 951, 978). Alternatives A and C, the only alternatives that would apply clearcutting, do not include producing complex early successional ecosystems as one of several

purposes for applying clearcut harvests. The Draft RMP/EIS did not contend that variable-retention harvest was necessary to create complex early successional habitat, only that it was one permissible purpose for implementing variable-retention harvest. That it is not the only means to create complex early successional habitat does not invalidate the use of variable-retention harvest for that purpose or for the several other purposes described in Alternatives B and D.

170. Comment Summary: The BLM should revise the EIS because the Forest Management section gives no information on how reforestation of logged areas would be achieved. The method of reforestation affects the quality and duration of the early seral stage that provides vital habitat for certain plants and wildlife. Early seral acreages are listed for the alternatives, but no clear definition is given of this stage.

Response: The BLM has added to the Proposed RMP/Final EIS additional information on how the BLM would achieve reforestation and additional information on the early seral stage of structural development (see the Forest Management section in Chapter 3). The definition of seral stage classes, including early seral, are included in the **Glossary**. The Proposed RMP includes management direction requiring reforestation within five years after regeneration harvest (**Appendix B** – Management Objectives and Direction). However, the Proposed RMP provides flexibility in specific reforestation methods based on site-specific conditions.

171. Comment Summary: The BLM should revise the EIS because Alternative B risks serious reforestation failures on the 282,445 acres on which low and moderate intensity practices would be applied because of vegetative competition in western Oregon forests. For these reasons, prohibiting tree planting seems inappropriate given statutory responsibilities to manage O&C lands for sustained-yield timber production.

Response: The Proposed RMP includes management direction requiring reforestation within five years of regeneration harvest in both the Moderate Intensity Timber Area and the Low Intensity Timber Area and would allow both natural and artificial reforestation (tree planting) (**Appendix B** – Management Objectives and Direction).

172. Comment Summary: The BLM should revise the EIS to increase the percent of a stand that may be left un-stocked after regeneration harvest from 10 percent under Alternative B to 25 percent. This would allow for rare situations where up to 25 percent of the stand may be desired to be left un-stocked. Page 952 states that up to 10 percent of the stockable stand may be left un-stocked. The Service encourages the BLM to consider a higher percentage available for natural regeneration for rare situations where up to 25% of the stockable stand may be desired to be left un-stocked.

Response: The Proposed RMP requires the BLM to reforest using natural or artificial regeneration within five years of harvest to a minimum stand level average density, which varies by Harvest Land Base sub-allocation. This direction in the Proposed RMP affords the BLM the discretion to vary planting densities across a harvest unit depending on site-specific information, and does not include the specific limitations on stocking in Alternative B.

173. Comment Summary: The BLM should revise the EIS to include silvicultural management, such as longer rotations to achieve a more diverse log supply, which would increase timber values to fulfill fiscal responsibility to counties.

Response: Both the Low Intensity Timber Area and the Moderate Intensity Timber Area in the Proposed RMP utilize long rotation management as a forest management strategy, resulting in a diverse log supply. Additionally, the uneven-aged management approach in the Uneven-aged Timber Area involves partial cutting of stands on an irregular re-entry cycle, which would also contribute to the variety of sizes and qualities of harvested timber. The BLM added additional information to the Forest Management section of the Proposed RMP/Final EIS that reports average regeneration harvest ages by alternative, and has provided an estimate of timber harvest volume by log size.

174. Comment Summary: The BLM should revise the EIS because direction in the LITA and MITA in the action alternatives contains direction for tree retention in regeneration harvest dependent on the amount of Riparian Reserve area in the stand. This will reduce the quality of habitat for northern spotted owls.

Response: The Proposed RMP does not include this management direction when determining retention levels for the Low Intensity Timber Area and Moderate Intensity Timber Area. Instead, the Proposed RMP requires tree retention based on retention of a portion of the pre-harvest tree basal area calculated solely on the timber harvest area. This change allows for clearer management direction and facilitates determination of retention levels based on site-specific information during project-level implementation planning.

175. Comment Summary: The BLM should revise the EIS to preclude management that would allow canopy closure to fall below 30 percent. Anything below this level leads to high densities of brush, increasing catastrophic fire risk.

Response: The BLM disagrees that reducing canopy closure below 30 percent necessarily increases catastrophic fire risk. The relationship of canopy closure to fire risk and its relative importance is site specific and depends on a number of factors, including ecological context and management objectives. Nevertheless, reducing canopy cover below 30 percent is necessary to achieve many forest management objectives. To achieve the BLM's stated purpose of producing a sustained yield of timber, creating forest openings large enough to grow new cohorts of trees is necessary. Many species in the planning area rely on shrubs, hardwoods, and other sun-loving forest plants for their survival. In order to develop multi-layered canopies to enhance ecological outcomes, it may be necessary to allow enough sunlight through the canopy to grow a new generation of trees. A thorough analysis of the environmental effects of forest management actions on fire and fuels is contained in Chapter 3. This analysis did not find that the BLM would implement timber management in a manner that would increase the risk of catastrophic fire under any of the alternatives.

176. Comment Summary: The BLM should revise the EIS to exclude timber salvage as a management option after wildfires. Many studies have shown (Beschta *et al.* 1995) the destructive nature of timber salvage and the negative effect it has on forest regeneration. Short-term financial gains should not outweigh best ecological practices.

Response: The Proposed RMP directs salvage harvest after disturbances in the Harvest Land Base to recover economic value and to minimize commercial loss or deterioration of damaged trees, but prohibits salvage harvest in the Late-Successional Reserve and Riparian Reserve except when necessary to protect public safety, or to keep roads and other infrastructure clear of debris (**Appendix B** – Management Objectives and Direction). The BLM is aware of studies on the environmental

impacts due to post-fire salvage logging, including the white paper produced by Beschta *et al.* (1995). That white paper focuses on the wisdom of salvage logging to meet ecological objectives. The BLM agrees that there is scientific controversy regarding the justification to salvage burned timber to enhance wildlife habitat outcomes. The same level of scientific controversy does not exist related to salvaging burned timber to recover economic value or removing dead trees for the purposes of protecting infrastructure and providing for public safety.

177. Comment Summary: The BLM should revise the EIS to include forest management that accelerates resilience treatments in the dry and very dry forest types.

Response: All action alternatives and the Proposed RMP would increase resilience treatments in dry and very dry forest types compared to current practices. **Appendix B** – Management Objectives and Direction includes management direction for the Proposed RMP relevant to the management of these forests in the Uneven-aged Timber Area, the Late Successional Reserve – Dry, and the Riparian Reserve – Dry. The management direction for Late Successional Reserve – Dry also includes target decadal acreage treatment targets to help meet the purpose of restoring fire-adapted ecosystems.

178. Comment Summary: The BLM should revise the EIS to retain legacy trees (>120 years) in all cases in harvest units, as these trees are the best habitat and most fire resistant.

Response: The Proposed RMP has incorporated management direction to protect large, older trees. The BLM disagrees that the best management approach to responding to the purpose and need for the RMP revision or meeting all objectives of the Harvest Land Base would be to apply a requirement to protect all trees above a 120-year age threshold. Coupled with regeneration harvest with retention or uneven-aged stand management, such a requirement would eventually reduce the timber production level of the stand, contrary to the purpose of the action to produce a sustained yield of timber. It is intuitively clear that if the BLM retains 15–30 percent of the stand basal area (or 5–15 percent in the Moderate Intensity Timber Area) and retains all trees over 120 year old, the abundance of trees over 120 years old will increase through successive harvesting rotations, so that eventually more than 15–30 percent of the stand basal area will be comprised of trees over 120 years old. Instead, the Proposed RMP would protect trees that are old *and* large in certain land use allocations, while allowing for necessary exceptions related to safety and operations. The Proposed RMP also includes management direction for the Uneven-aged Timber Area and the Late Successional Reserve – Dry directing the BLM to reduce competition around these trees and reduce adjacent fuels to increase tree vigor and reduce the risk of tree mortality (**Appendix B** – Management Objectives and Direction). These management directions would protect the majority of legacy trees within harvest units with characteristics contributing the most to complex habitat and would provide for forest resiliency.

179. Comment Summary: The BLM should revise the EIS because cutting timber stands within the Deer Creek Watershed contradicts the Medford District BLM's Water Quality Restoration Plan and is environmentally detrimental.

Response: The Water Quality Restoration Plan for the Deer Creek Watershed (USDI BLM 2011b) is not an existing decision supported by an EIS that the BLM is carrying forward into the RMPs under this revision (see Chapter 1, Existing Decisions). As such, there is no requirement for any of the action alternatives or the Proposed RMP to adhere to the goals and objectives established under the Water Quality Restoration Plan for the Deer Creek Watershed. The Draft RMP/EIS did not find any detrimental environmental impacts to water quality in the decision area, including the Deer Creek

watershed, under any of the alternatives (USDI BLM 2015, pp. 286–318). The commenter does not identify any errors in that analysis.

180. Comment Summary: The EIS should not include pre-decisional approval for BLM to conduct falling of trees in proposed logging units as a timber cruising mechanism as is shown in Chapter 2 (p. 39). The impacts of this proposed practice are not disclosed or analyzed in this document, and implementation without analysis would violate the NEPA.

Response: This listing of administrative actions is not a "pre-decisional approval" of these actions. Land use plans are designed to guide and control future uses, including describing allowable uses (40 CFR 1601). The Draft RMP/EIS provided a list of administrative activities that would be allowable and that the BLM anticipates would occur under all alternatives (USDI BLM 2015, p. 39). The BLM would conduct the appropriate NEPA compliance to support decision-making prior to implementation of sample tree falling and other administrative actions.

181. Comment Summary: The BLM should revise the EIS because it fails to describe the connection between logging road density and timber harvest density with Port-Orford-cedar root disease occurrence. Studies have found that both road networks and timber harvest patchworks were significantly related to cedar root rot heterogeneity (Clark 2011).

Response: As explained in the Draft RMP/EIS, the BLM would continue to apply management of Port-Orford-Cedar in accordance with the Record of Decision and Resource Management Plan Amendment of Management of Port-Orford-Cedar in Southwest Oregon, Coos Bay, Medford, and Roseburg District (USDI BLM 2004), and the Draft RMP/EIS incorporated the analysis conducted for the 2004 Port-Orford-cedar ROD by reference (USDI BLM 2015, p. 23).

The implementation of the Proposed RMP is well within the bounds of outcomes considered in the 2004 ROD for Port-Orford-cedar management. The road construction projected under the Proposed RMP would be less than road construction projected under the No Action alternative (see the Trails and Travel Management section in Chapter 3), and is within the range of effects considered in analysis for the 2004 Port-Orford-cedar ROD.

The Standards and Guidelines in the 2004 Port-Orford-cedar ROD describe all currently available disease-control practices, dividing them between those that should be applied generally (e.g., community outreach and restoration) and those that may, depending on site conditions, be applied to specific management activities (e.g., road construction and timber sales). For the latter group, the 2004 Port-Orford-cedar ROD includes a risk key to clarify the environmental conditions that require implementation of one or more of the listed disease-controlling management practices (USDI BLM 2004, pp. 32–37). Under all alternatives and the Proposed RMP, the BLM would apply the risk key during site-specific project planning. This approach precludes the need for additional project-specific analysis of mid-and large-geographic and temporal-scale effects, because the risk key describes conditions where the BLM would apply risk reduction management practices.

Hydrology

182. Comment Summary: Given the impaired nature of so many of our rivers, no increase in temperature originating with deliberate BLM actions can be tolerated, let alone the predicted 5 percent the DEIS identifies as a result of adopting either of the Alternatives B or C.

Response: The Proposed RMP includes a Riparian Reserve design for fish-bearing streams and perennial streams that is substantially similar to Alternative D.

The Draft RMP/EIS analyzed stream shading using two different methodologies. Method A concluded that all streams would retain sufficient stream shading to avoid any measurable increase in stream temperatures. Method B identified that approximately 5 percent of fish-bearing and perennial stream miles under Alternatives B and C and approximately 0.5 percent of fish-bearing and perennial streams under the No Action alternative, Alternative A, and Alternative D would be susceptible to shade loss that could result in stream temperature increases (USDI BLM 2015, pp. 294–297). The analysis in the Proposed RMP/Final EIS concludes that the Proposed RMP would have similar effects on stream shade to the No Action alternative, Alternative A, and Alternative D (see the Hydrology section of Chapter 3). Under Method B, the analysis concluded that this shade loss would occur if the outer zones of the Riparian Reserve were to be treated. Such conditions occur most frequently, where the riparian stand nearest the stream has widely spaced trees with a low canopy density. There would be no change in stream shading if the BLM were to not thin stands in the outer portions of the Riparian Reserve in these susceptible areas. Given that the riparian stands in these susceptible areas typically have low tree density and low canopy density, thinning the Riparian Reserve under such stand conditions would be unnecessary to comply with the management direction and meet the management objectives in any of the alternatives. Under such circumstances, the BLM would either defer forest management in the outer zones of these stream segments until the riparian stand nearest the stream increased in density or leave the Riparian Reserve un-thinned along these stream segments. In either case, it is unlikely that any of these areas susceptible to shade loss that could potentially result in stream temperature increases would, in fact, experience stream temperature increases.

183. Comment Summary: Raising stream temperatures directly inhibits BLM watershed management goals and may result in violations of the Clean Water Act associated with TMDL-listed waterbodies.

Response: The Draft RMP/EIS analyzed the effects of the alternatives on stream temperatures through two methodologies that assessed stream shading. The first methodology concluded that all alternatives would avoid any measurable increases in stream temperature at this scale of analysis. The second methodology found that a small percentage of streams would be susceptible to an increase in stream temperatures under all alternatives, including the No Action alternative. The Draft RMP/EIS explained that this result does not reflect an actual reduction in stream shading, but a susceptibility to such a reduction in stream shading if the BLM thins the outer zone along these streams. If the BLM does not thin the stand in the outer zone, no reduction in stream shading would occur (USDI BLM 2015, pp. 286–297). Thus, the analysis in the Draft RMP/EIS identified a susceptibility to a reduction in stream shading that would occur under all alternatives; any actual increase in stream temperature is speculative and would depend on project-specific and site-specific conditions. The Proposed RMP/Final EIS specifically identifies the stream segments that would be susceptible to a reduction in stream shading.

184. Comment Summary: The Hydrology section (DEIS:286–297) and Fisheries section (DEIS:232–233) are inadequate because they focused almost entirely on shade models with respect to impacts of timber harvest and failed to consider stream temperature change in the context of climate change.

Response: The Draft RMP/EIS acknowledged the potential future effect of climate change on stream temperatures (USDI BLM 2015, pp. 149–150). However, it is not possible to incorporate predictions of climate change into the modeling of stream shading and subsequent effects on stream temperature. There is much uncertainty regarding climate change and effect upon stream temperature response, especially in the next 10–20 years. Despite increased average annual and seasonal air temperatures in the planning area, the analysis in the Draft RMP/EIS noted the decreasing stream temperatures at long-term monitoring sites within the planning area (USDI BLM 2015, pp. 143, 293–294). Riparian forest stand development with corresponding increasing shade has apparently had a countervailing effect on warming air temperatures. It is not possible to forecast quantitatively how future riparian forest stand development would interact with increasing annual and seasonal air temperatures to affect water temperature.

185. Comment Summary: The BLM is using hydrological analysis that is biased and incomplete throughout the entire RMP. The BLM limits the hydrologic analysis to "peak flows." The BLM must address the impacts of all alternatives on low flows not just peak flows. The BLM fails to mention that there can be significant impacts caused by even small increases in the 1–2 year peak flows. The BLM's model is biased in that it only considers peak flow impacts to be of concern in the Rain-on-Snow (ROS) transitional zone within watersheds.

Response: There is no substantive basis for the commenter's assertion that the BLM is using hydrological analysis that is biased and incomplete.

The BLM chose a hydrological analysis that could compare the alternatives and potentially detect a change based on the analytical assumptions within the current hydrological understanding on how watershed systems work.

The commenter asserts that the BLM misrepresents Grant *et al.* (2008) in the peak flow analytical procedure when interpreting the peak flow response for the rain hydroregion and the rain-on-snow hydroregion in Figures 8 and 10 of Grant *et al.* (2008). The threshold of response is not an inflection point, but is the point where the mean response line crosses into the level of detection. These response curves should be applied cautiously when scaling up to larger watersheds such as the subwatershed scale (HUC 12) used in this analysis (Grant *et al.* 2008). Most experimental watershed studies have been conducted at the site scale (< 4 mi^2). However, the magnitude of peak flow response by forest management declines as watershed area increases, for a variety of reasons: storm size and variability over a watershed, timing of tributary inputs, conveyance losses, flood-plain storage, and channel resistance (Grant *et al.* and references cited therein 2008). There is no known hydrologic mechanism to yield a higher percentage increase in peak streamflows in a larger watershed (Grant *et al.* 2008). Because of these scaling-up challenges, the BLM believes the peak flow analytical procedure is conservative in the estimation of effects.

The BLM has added text to the Proposed RMP/Final EIS to explain that the BLM did not analyze in detail the effects of timber harvest on flow attributes other than peak flows (see the Hydrology section of Chapter 3). Specifically, the BLM did not analyze in detail the effects on other flow attributes, such as timing, annual water yield and low flows because either: (1) an effect is negligible or not detectable, (2) climate variability cannot be separated from the effects of forest management, (3) no known practicable analysis procedures are available to compare alternatives at the planning area scale for contemporary forest practices, or (4) specific and plan-wide streamflow information is not available in order to conduct an analysis. The commenter does not provide any alternate methodologies to evaluate these hydrological attributes at the planning area scale.

186. Comment Summary: Overstocked forests will reduce water availability. Too many trees cause snow not to reach the ground.

Response: The BLM has added text to the Proposed RMP/Final EIS to explain that the BLM did not analyze in detail the effects of timber harvest on water yield (see the Hydrology section of Chapter 3).

The commenter is correct that dense forests can reduce water availability. Forest evapotranspiration is the primary process responsible for changes in water yield as a result of cutting trees or growing trees. Results from thirty-nine paired watershed studies referencing changes in water yield from changes in forest cover conclude: (1) reduction of forest cover increases water yield, (2) planting forests on bare land, meadows or understocked forests decreases water yield, and (3) the response is highly variable and at times unpredictable (Brown *et al.* 2005 and references therein). Snow accumulation in the forest depends upon forest structure and density. Nevertheless, none of the alternatives would have a significant effect on water availability. Therefore, this issue does not require detailed analysis.

187. Comment Summary: The RMP needs to assess how clearcutting may deplete ground water supplies because regenerating trees are vigorously growing and can absorb greater volumes of water.

Response: The BLM has added text to the Proposed RMP/Final EIS to explain that the BLM did not analyze in detail the effects of timber harvest on water yield (see the Hydrology section of Chapter 3).

Clearcutting or other timber harvest under any of the alternatives would not have a consequential effect on ground water supplies. Therefore, this issue does not require detailed analysis. There is little substantive basis for the commenter's conclusions. Paired watershed deforestation experiments (including clearcutting) and regrowth of vegetation in experimental studies worldwide, show that water yield increases and gradually returns to the control watershed yields in 8–20 years (Brown *et al.* 2005 and references cited therein). The BLM acknowledges that some studies suggest that young forests transpire water to a greater degree than older forests, and this may have something to do with leaf area or sapwood area (Moore *et al.* 2004). However, beyond the reasons why young trees may transpire water more efficiently than older trees of the same species in a similar environment, there is little information to separate the evapotranspiration demand in young trees from the evapotranspiration demand in mature forests. Further, precipitation and runoff processes mask influences on water yield from differing vegetation, where a measurable difference in groundwater flow or annual yield can be demonstrated. Thus, even if the alternatives could have a consequential effect on ground water supplies, it would not be possible to construct an analysis of the effect of different harvesting practices on ground water supplies that could show any difference among the alternatives.

188. Comment Summary: Factors such as winter base flows, summer low flows, total flow volumes and the timing and duration of flows should be considered within the watershed analysis for each alternative.

Response: The Proposed RMP/Final EIS has added explanation of these issues that the BLM considered, but did not analyze in detail (see Hydrology section of Chapter 3).

189. Comment Summary: Alternatives do not properly address all possible sources of water into forest hydrological systems.

Response: The analysis in the Draft RMP/EIS analyzed the effects of the alternatives on water quality and timing of flows, including effects on stream shade, peak flows, and sediment (USDI BLM 2015, pp. 286–320). The BLM has added text to the Proposed RMP/Final EIS to explain that the BLM did not analyze in detail the effects of timber harvest on water yield (see the Hydrology section of Chapter 3).

190. Comment Summary: The Affected Environment and Environmental Consequences should consider the studies and results of the research done by the Oregon State University Watersheds Research Cooperative.

Response: The BLM agrees that research done by the Oregon State University Watersheds Research Cooperative is relevant and pertinent information for contemporary forest management, but cautions that much of the information was developed for industrial forestland. Because of the substantial differences between industrial forestland management and the alternatives considered in this analysis, especially with regards to riparian stand management, the research from the Oregon State University Watersheds Research Cooperative is only of limited relevance. The BLM has included relevant information from the research from the Oregon State University Watersheds Research Cooperative in the Proposed RMP/Final EIS (see the Hydrology section of Chapter 3).

191. Comment Summary: The Draft RMP/EIS does not address public safety and conservation concerns impacted by shallow, rapidly moving landslides, and also do not address Best Management Practices for future harvest to reduce the potential for landslides in proximity to the State's highway system.

Response: The Proposed RMP has added management direction that directly addresses avoiding practices that could cause landslides that would damage infrastructure such as highways (see **Appendix B** – Management Objectives and Direction). In addition, the Proposed RMP includes unstable lands within the Riparian Reserve, limiting management actions that would occur on unstable lands.

192. Comment Summary: Although regeneration harvest has a higher likelihood of increasing landslide frequency, thinning can also increase the frequency of landslides, depending on the harvest intensity. Reduced shear strength, associated with increased saturation, results from decreased tree canopy interception and reduced transpiration (Swanston 1973, Harr and McCorison 1979, Keim and Skaugset 2003, Johnson *et al.* 2007). NOAA recommends that the BLM analyzes the potential effects of thinning on landslide risk, particularly in areas that will receive high intensity thinning prescriptions (> 80 trees per acre, post thinning).

Response: The analysis of landslide risk necessarily requires considerable analytical assumptions. The BLM analyzed the effect of regeneration harvests on landslide risk. This analysis of regeneration harvests would include variable retention harvests that would retain of up to 30 percent of the basal area of the stand (e.g., the Low Intensity Timber Area in Alternative B). (The BLM believes the commenter meant < 80 trees per acre, post thinning in their comment).

The Draft RMP/EIS explained the basis for the analytical assumption that commercial thinning would not affect landslide risk: residual live trees with intertwined roots promote slope stability and transpire water, which helps to lower soil water, a causative factor in slope failures, and many cut stumps are root-grafted and continue to contribute to slope stability (USDI BLM 2015, pp. 307–308). Landslide density for extreme storms in mixed forests of 10–80 years of age (which includes the ages at which stands are typically thinned) is 2.7 times lower than open areas (Miller and Burnett 2007). As the commenter acknowledges, thinning has less effect on landslide risk than regeneration harvest. The BLM does not contend that thinning has no effect on landslide risk, but only that the effect is small and speculative, such that it would not be possible to analyze that risk at the scale of the planning area and would not show any measurable effects among the alternatives.

193. Comment Summary: Best Management Practices are not a Management Direction; there is an element of uncertainty related to the location of road construction, therefore we recommend that the FEIS should include a comprehensive analysis of landslide risk from new road construction.

Response: It would not be possible to analyze the effects of new road construction on landslide risk at the scale of the planning area. Whether new road construction could contribute to landslide risk would depend on the specific road location and construction relative to areas of landslide susceptibility. The BLM cannot specifically forecast the spatial locations of new road construction under the alternatives and therefore cannot match road locations with topographic attributes to determine a relative landslide density.

New road construction is unlikely to contribute to landslide risk. All alternatives would construct little new road mileage compared to the existing road network (Draft RMP/EIS, pp. 648–650). New road construction would generally not be located in areas of landslide susceptibility. Most new construction would likely be short spurs off local roads, because the existing road infrastructure meets much of the needs for resources management, especially timber harvest. Under the alternatives considered in the Draft RMP/EIS, Best Management Practices would include locating roads on stable locations and minimizing construction on steep slopes and high landslide hazard locations (USDI BLM 2015, p. 1140).

It was appropriate for the Draft RMP/EIS to analyze effects incorporating the effect of Best Management Practices. As explained in the Draft RMP/EIS, monitoring has shown that the BLM has generally applied Best Management Practices appropriately and that Best Management Practices have generally been effective (Draft RMP/EIS, p. 1140). Thus, it is highly probable that the BLM will continue to apply Best Management Practices appropriately and that they will continue to be effective. The commenter does not address these monitoring results or explain how they believe the BLM should address what they perceive as "uncertainty" associated with Best Management Practices. Nevertheless, the Proposed RMP has added management direction that directly and specifically addresses road construction on unstable slopes (**Appendix B** – Management Objectives and Direction).

194. Comment Summary: The EIS needs to consider potential landslides and other effects from a catastrophic Cascadia Subduction Zone earthquake.

Response: A major earthquake on the Cascadia Subduction Zone is possible within the timeframe of the landslide analysis, but is not highly probable. The U.S. Geological Survey identifies that the last major earthquake on the Cascadia Subduction Zone was about 300 years ago and describes an average interval of 500–600 years between great earthquakes on the Cascadia subduction zone

(Personius and Nelson 2006). Thus, a major earthquake is not reasonably foreseeable for the purposes of this landslide analysis and should not be included in the analysis. Furthermore, the effects of a major earthquake would not differ among the alternatives. This is because, in the event of a magnitude 8–9 earthquake, the main trigger for landslides will be from the extreme shaking intensity interacting with susceptible landforms and the degree of soil saturation. Mountain road locations or harvest practices will be of inconsequential importance for initiating slope failures, because the earthquake will likely trigger all types of landslides from debris-flows to large deep-seated rock slides in roaded and unroaded areas alike.

195. Comment Summary: Best Management Practice 'R 094' (in Appendix I) should be re-designated as management direction and incorporated into Appendix B. Limiting sediment production associated with hauling is an important component of a successful watershed restoration strategy and, as such, should carry the weight of management direction.

Response: All action alternatives analyzed in the Draft RMP/EIS included Best Management Practice R 094: "Suspend commercial road use where the road surface is deteriorating due to vehicular rutting or standing water, or where turbid runoff may reach stream channels." The Proposed RMP has added this requirement as management direction, as the commenter suggests (**Appendix B** – Management Objectives and Direction).

196. Comment Summary: Increased logging in riparian areas will necessitate increased road density within sensitive riparian habitats including roads within 'sediment delivery distance' (DEIS p. 317). The BLM fails to quantify the amount of road to be constructed in Riparian Reserve or the amount of sediment that will be added to streams. The BLM neglects to disclose which streams in the planning area are currently TMDL listed for sediment and how the agency intends to meet the Clean Water Act obligations.

Response: The BLM did quantify and analyze anticipated new road construction within the sediment delivery distance of streams. The BLM determined road miles by harvest type and distributed by road type (paved, gravel and natural surface) and then quantified and analyzed the resultant sediment delivery (USDI BLM 2015, pp. 313–318). The Draft RMP/EIS explained that the existing road infrastructure is essentially in place, and relatively few new roads would be constructed in the future under any of the alternatives compared to the existing road system. The commenter does not identify any flaw or inaccuracy in that analysis.

The new road construction within the sediment delivery distance of streams almost entirely overlays the Riparian Reserve under all alternatives and Proposed RMP. In analyzing sediment delivery to streams, the amount of road construction within the sediment delivery distance provides relevant information, in contrast to the amount of road construction within the Riparian Reserve land use allocation, which differs by alternative. Adding quantification of the amount of road construction within the Riparian Reserve would not improve the analysis of effects and it is not relevant to a reasoned choice among alternatives.

The BLM meets the Clean Water Act obligations through the sum of the Riparian Reserve land use allocation, management direction, and Best Management Practices. Further, the BLM is an ODEQ-designated management agency to meet Clean Water Act obligations. This means that, in addition to the foregoing preventative controls and practices, BLM specialists decide the necessary steps to maintain water quality during activity planning and implement those preventative measures. The

BLM would maintain water quality at the highest practicable level to meet water quality standards and TMDL load allocations as set by the State of Oregon's Department of Environmental Quality.

There are roughly 340 miles of streams in the planning area that are water quality limited for sedimentation or turbidity, and approximately 13 percent (or 46 miles) are located in the decision area. The BLM does not disclose which streams in the planning area are currently Total Maximum Daily Load (TMDL) [303(d)] listed for sediment in the EIS because disclosing this information is not relevant to the analysis or making an informed choice among alternatives. Relatively few stream miles within the decision area are water quality limited for sediment, and a process exists to restore these stream miles (TMDL Implementation Plans). The BLM develops TMDL Implementation Plans to identify sources, necessary strategies, and appropriate BMPs to restore water quality limited waters and reduce pollution for surface waters on lands within BLM's jurisdiction.

The commenter mistakenly implies that there would be "increased logging in riparian areas" under the alternatives. All action alternatives would have less Riparian Reserve thinning than the No Action alternative and most alternatives would have less thinning than the BLM has been implementing in the past two decades.

197. Comment Summary: The FEIS should include specific standards for reducing Total Maximum Daily Load (TMDL) from logging roads, thinning, and other logging activities to minimize chronic sediment to Surface Water Source Areas.

Response: The Proposed RMP includes specific management direction (**Appendix B** – Management Objectives and Direction) and Best Management Practices (– Best Management Practices**)** to reduce or avoid sediment delivery to streams from timber harvest, road construction, and other management actions.

198. Comment Summary: Timing of sediment input to a stream is not always equal to timing of impact on salmonid fish, and sediment input timing cannot be considered a reasonable criterion for concluding that erosion has little effect on these fish. The majority of the suspended sediment analysis focuses on the effects from new road construction. Although the DEIS identifies the level of suspended sediment generated from existing roads, there is no analysis of effects to ESA-listed fish compared to natural, background levels of suspended sediment. We recommend that the FEIS include a modified sediment analysis that (1) avoids the assumption that the timing of sediment delivery is more important than the volume, (2) considers effects of both the existing road network and proposed roads, and (3) includes consideration of long-term sediment routing and effects.

Response: The commenter is mistaken: the BLM did not assume that the timing of sediment delivery is more important than the volume of sediment delivery. In evaluating the effects of sediment delivery to streams on both water quality and fisheries, the analysis in the Draft RMP/EIS provided a reasoned analysis based on the detailed, quantified information on the volume of sediment delivery (USDI BLM 2015, pp. 230–233, 313–318). The BLM acknowledges the importance of the timing of sediment delivery and maintains that the timing is relevant in the analysis of effects on both water quality and fisheries. The timing of sediment delivery is highly linked to sediment yields and water flow volume. The analysis did consider the effects of existing and proposed roads. Increasing sediment yield with stream discharge has been reported in numerous studies in western Oregon and the United States, varying by seasonal trends in precipitation and streamflow (Skaugset *et al*. 2013, Luce and Black 1999). The largest proportion of watershed sediment yield is restricted to a few days each year with the largest discharge. The BLM has observed that under normal precipitation and

runoff, many roadside ditches carry little to no water or sediment. The BLM expects this seasonal pattern of a few large storms in the annual series to produce higher runoff and to yield the majority of the sediment load. Nevertheless, the analysis in the Draft RMP/EIS directly addressed the volume of sediment delivery under the alternatives in the analysis of effects on water quality and fisheries.

The BLM modeled sediment yields for new road construction under the alternatives together with the sediment yields from existing roads to show long-term potential sediment delivery under the alternatives (USDI BLM 2015, pp. 313–318), as the commenter recommends.

It is not practical to quantify the natural, background levels of suspended sediment in streams at the scale of the planning area. Natural background sediment yields vary over a wide range by watershed characteristics, area, vegetative cover, land use, and precipitation patterns. Natural background sediment yields are difficult to disentangle from land use history including the effect of harvests and roads. Watershed-intrinsic factors in managed and unmanaged areas, including widely scattered and infrequent landsliding and streambank erosion, heavily influence the natural, background levels of suspended sediment in streams. There is no comprehensive data on the natural, background levels of suspended sediment in streams across the planning area, and the high variability, both spatially and temporally, makes approximation or extrapolation from the existing data inappropriate.

Although natural, background levels of suspended sediment in streams are highly variable; the sediment delivery from road construction under the alternatives is likely to be very small in comparison. For example, Zégre (2008) calculated annual sediment yields for small headwaters catchments in Hinkle Creek, on western Oregon industrial forestland, in a paired watershed study using contemporary forest harvesting. Basin-wide annual sediment yields for this 5-year study averaged 134 tons/mile^2/year. Comparatively, **Table 3-72** *Potential fine sediment delivery from existing roads* (USDI BLM 2015, p. 314) shows modeled potential sediment delivery from roads, including BLM-administered and other lands in the planning area, total 13.43 tons/mile^2/year. Comparing to the Hinkle Creek watershed study, as an example, shows that roads in the planning area on multiple ownerships comprise a small proportion of the annual sediment budget. New road construction under the alternatives would add less than 1 percent to the sediment yield from the existing road system. Thus, using the example of Hinkle Creek, new road construction under the alternatives would, on average, add less than 0.001 percent to the natural, background levels of suspended sediment in streams.

Finally, quantified data on the natural, background levels of suspended sediment in streams across the planning area is not essential to a reasoned choice among the alternatives. The natural, background levels of suspended sediment in streams would not change as a result of any of the alternatives. As explained in the Draft RMP/EIS, the relevant analytical threshold for analyzing the effects of sediment delivery on fish is the amount of increase in fine sediment over natural levels at the watershed scale (USDI BLM 2015, p. 230). The information available to the BLM at the scale of the planning area is sufficient to evaluate the increase in sediment delivery relevant to the analytical thresholds. More data on the natural, background levels of suspended sediment in streams would not improve the evaluation of the alternatives against that analytical threshold or the comparison of the relative effects of the alternatives on water quality or fisheries.

In a December 18, 2015 letter from NMFS to the BLM, NMFS acknowledged that these comments misinterpreted the Draft RMP/EIS and asked that the comments be ignored. NMFS clarified that they believe that the approach in the Northwest Forest Plan is not the only approach that would ensure the protection and recovery of threatened and endangered fish, and that the best available science also supports an approach modified from Alternative A or D that includes a one site-potential tree height Riparian Reserve on fish-bearing streams and perennial streams.

199. Comment Summary: The RMP/DEIS fails to establish temporal baseline water quality conditions from known data sets. Water quality data needed to compile baseline water quality condition is available from ODEQ.

Response: The BLM is unaware of any water quality data sets that can characterize baseline water quality conditions across the intermingled BLM-administered lands in the planning area. The BLM-administered lands are often upstream of other land uses and often meet anti-degradation criteria. The ODEQ water quality assessment database referred to by the commenter is inappropriate to analyze water quality constituents from BLM–administered lands for the following reasons:

- The ODEQ stream monitoring sites for the most part are downstream of BLM-administered lands
- The receiving streamflow at the ODEQ monitoring sites normally cross varying ownerships upstream, involving a mix of stream-adjoining (or runoff from) forestland owners with differing forest practices, and private landowners using agricultural practices
- The receiving streamflow at the ODEQ monitoring sites may be capturing return flow from upstream point sources (e.g., sewage treatment plants, animal feedlots, and log ponds)

Therefore, it would not be possible to attribute water quality changes from BLM management activities relative to this baseline information. Additionally, the ODEQ water quality assessment database has a variety of collection methods, making comparisons across this planning area difficult. Therefore, a meaningful assessment of BLM water quality conditions across the planning area cannot be determined from the ODEQ datasets.

200. Comment Summary: The BLM failed to address nutrient loading of streams due to logging. The DEIS does not disclose impacts to surface waters and fish habitat on and downstream of BLM lands from nutrient leaching associated with BLM forest treatments, nor does the DEIS consider possible management practices to mitigate harm to downstream waters from nutrient loading. More recent studies (e.g., Nieber *et al.* 2011 and Sweeney and Newbold 2014, and references cited therein) suggest that unlogged forest buffers in excess of about 150' slope distance from surface waters and stream channels, including headwater channels with intermittent or ephemeral flow, are needed to mitigate nutrient leaching associated with upslope logging the maximum degree practicable (that is, with 90% of mobilized nutrients recaptured and retained in soils and vegetation).

Response: The Draft RMP/EIS did not address the issue because timber harvest under the alternatives would not have a significant effect on nutrient loading to streams. The Proposed RMP/Final EIS added explanation that the BLM did not analyze this issue in detail (see the Hydrology section of Chapter 3).

The nutrients of potential concern for streams are nitrogen and phosphorus. Nitrate, dissolved inorganic nitrogen, can enter aquatic ecosystems via point sources (e.g., farm and aquaculture wastewater, municipal and industrial sewage) and nonpoint sources (e.g., cultivation of nitrogen-fixing crops, use of animal manure and inorganic nitrogen fertilizers, logging and fuels management treatments that remove vegetation and increase leaching from forest soils). Streamside areas can remove dissolved nitrogen from subsurface water by denitrification, plant uptake, and microbial uptake (Sweeney and Newbold 2014 and references therein). Phosphorous as phosphate can be lost through soil erosion and, to a lesser extent, to water running over or through soil. Because phosphate is relatively immobile in soils, erosion control practices minimize phosphate loading to streams.

Under all alternatives and the Proposed RMP, allocation and management of the Riparian Reserve would reduce or avoid nutrient loading of streams from upslope forest practices. Sweeney and Newbold (2014) compared the nitrate removal efficiency and buffer width from 30 studies worldwide, half with forest vegetation, and concluded that effective nitrogen removal at the watershed scale probably requires buffers at least 100 feet wide, and the likelihood of high removal efficiencies continues to increase in buffers wider than 100 feet. Nieber *et al*. (2011) suggest that average nitrogen and phosphorus retention is around 80 percent for 100-foot buffers. The authors calculated the percentage removal of nitrogen and phosphorus into wetlands based on two literature reviews that covered 55 nationwide research papers. The Riparian Reserve under all alternatives and the Proposed RMP for perennial and fish-bearing streams would range from 150 feet to one site-potential tree height, which compare favorably with effective buffer widths in these references, indicating that the Riparian Reserve under all alternatives would provide effective nutrient filters on these streams. In a December 18, 2015 letter from NMFS to the BLM, NMFS acknowledged that the best available science supports an approach modified from Alternative A or D that includes a one site-potential tree height Riparian Reserve on fish-bearing streams and perennial streams. As explained above, this buffer width would be sufficient to avoid any measurable increase in nutrient levels in streams.

Riparian Reserve widths of 50 feet on non-fish-bearing intermittent streams in Alternatives B and C and in Class III subwatersheds in the Proposed RMP may not, in and of themselves, be sufficient to prevent nutrient loading to streams on all sites. Several factors that control buffer effectiveness (e.g., vegetation characteristics, slope, soil compaction and texture, percent organic matter, subsurface water flux) are dependent on site-specific conditions (Nieber *et al.* 2011, Sweeney and Newbold 2014) that cannot be fully assessed at the scale of this analysis. However, the potential for nutrient loading in these streams is highly limited. Under the Proposed RMP, the majority of the acreage upslope of the Riparian Reserve would be allocated to other reserve land use allocations, limiting the extent and intensity of upslope timber harvest. Under the Proposed RMP, Class III subwatersheds would constitute a small percentage of the decision area (see Chapter 2). Timber harvest and manual application of fertilizer upslope of non-fish-bearing intermittent streams would be staggered in space and time, minimizing the potential for cumulative effects from nutrient loading within the analysis area. In addition, trees remaining in upland thinned stands and retention trees in regeneration and selection harvests would increase their growth rate and uptake of nutrients and water following harvest (Ruzicka *et al*. 2014, Chan *et al.* 2004, Reiter and Beschta 1995).

Maintenance of continuous forest cover and sources of large wood on all streams under all alternatives and the Proposed RMP, together with continued instream habitat restoration, would ensure effective nutrient processing in the decision area, which would further minimize any nutrient loading in streams. Peterson *et al.* 2001 studied nitrogen in headwater streams in North America and found that the most rapid uptake and transformation of inorganic nitrogen occurred in the smallest streams where large streambed to water volume ratios favor rapid nitrogen uptake and processing. Streams with greater complexity, including low-order streams with log and boulder steps and higher order streams enhanced with boulders and wood for fish habitat, are more effective at nitrogen uptake than those lacking obstructions and backwaters, because the complexity provides more opportunities for water to come into contact with stream organisms that process and remove nitrogen (Johnson 2009).

As a result on the Riparian Reserve providing an effective nutrient filter on most or all streams, the limited extent and intensity of timber harvest and fertilization upslope of the Riparian Reserve, and the effective nutrient processing in riparian and aquatic systems, none of the alternatives or the Proposed RMP would have a significant effect on nutrient loading in streams.

201. Comment Summary: BLM lands are crucial for providing clean drinking water to 1.5 million Oregonians, high quality water for listed salmon, habitat for threatened wildlife, and for preparing communities and ecosystems for the effects of climate change. Improved drinking water protection would entail added emphasis actions. For example, we recommend that Cave Junction and the Kerby Water District receive a higher degree of watershed protections and higher priority for restoration. Benefits of BLM watersheds are irreplaceable and will only be degraded by logging on LSRs and Riparian Reserve.

Response: The BLM's primary water quality protection strategy is composed of the Riparian Reserve land use allocation, especially the inner zone along streams, management direction for the Riparian Reserve and hydrology, and the Best Management Practices. These preventative measures have complementary goals with Oregon's drinking water protection program. The Proposed RMP/Final EIS has added discussion of the link between BLM's normal activities and potential water contaminants. The BLM has identified the public water systems for lands that BLM administers (USDI BLM 2008, Appendix J – Water). This summary includes public water system ID, name, source, population served, BLM-administered acres and other acres.

The drinking water protection program in Oregon is through a partnership between the Oregon Department of Environmental Quality (ODEQ) and Oregon Health Authority (OHA). The BLM disagrees that source water protection watershed within the East Fork Illinois River needs additional protections than what would be provided under the Proposed RMP. The City of Cave Junction's Public Water System (PWS) has a surface source on the East Fork Illinois River. The BLM is a minority landowner, with lands occupying 12 percent of the watershed. The OHA has determined that the Cave Junction PWS is an outstanding performer. The criteria for outstanding performance include, (1) No Maximum Contaminant Level (MCL), Action Level, or Treatment Technique violations in the last 5 years; (2) No more than one Monitoring and Reporting violation in the last 3 years, (3) No significant deficiencies or rule violations identified during the current water system survey; and (4) Has not had a waterborne disease outbreak attributable to the water system in the last 5 years (ODEQ). Thus, there is no evidence to support the argument that this watershed needs increased protection for water quality. In addition, the BLM has little ability to affect water quality in this watershed because of limited ownership. Nonetheless, the analysis in the Draft RMP/EIS concluded that the alternatives would provide for protection of water quality. The commenter does not identify any error in that analysis and does not support their claim that the logging proposed under the alternatives would result in degraded water quality.

202. Comment Summary: RMP fails to adequately discuss the importance of the Port-Orford-cedar to water quality and stream function. RMP fails to assess consequences of root disease risk and lack of shade from action alternatives.

Response: The BLM has already analyzed and considered the management of Port-Orford-cedar and Port-Orford-cedar root disease in the Final Supplemental EIS Management of Port-Orford-Cedar in Southwest Oregon (USDA FS and USDI BLM 2004). The Draft RMP/EIS identified the Record of Decision for Management of Port-Orford-Cedar in Southwest Oregon (USDI BLM 2004) as an existing decision that the BLM will incorporate into the RMPs (USDI BLM 2015, p. 23). The conceptual framework, vectors of disease spread and management practices in the Record of Decision for Management of Port-Orford-Cedar in Southwest Oregon are still relevant. There are no effects of management of Port-Orford-cedar or Port-Orford-cedar root disease that are substantially different than the effects analyzed in the Final Supplemental EIS Management of Port-Orford-Cedar in Southwest Oregon. Furthermore, the effects of management of Port-Orford-cedar or Port-Orford-

cedar root disease would not differ among alternatives. Therefore, there is no need for any specific additional analysis of management of Port-Orford-cedar or Port-Orford-cedar root disease in this RMP revision.

203. Comment Summary: Factors such as down-cutting, excessive lateral movement and stream bank erosion should be considered in alternatives that manage for increased OHV use.

Response: The BLM agrees that stream stability depends upon intrinsic watershed factors and management history. However, the commenter has not shown a causal linkage between OHV use and stream stability that the BLM could evaluate to show differences among the alternatives. The BLM has included Best Management Practices designed to protect water quality when constructing and maintaining OHV trails within Riparian Reserve, including stream crossings (USDI BLM 2015, p. 1165).

204. Comment Summary: The DEIS should explain plans to reduce watershed, water quality and fishery impacts from roads, inclusive of reduction of road extent through limits on new road construction, decommissioning of existing roads, and drainage improvements to 'stormproof' roads that would remain on the landscape permanently.

Response: The Proposed RMP/Final EIS has added discussion of how the BLM would implement watershed restoration (**Appendix X** – Guidance for Use of the Completed RMPs).

The Draft RMP/EIS included an estimate of 372 miles of permanent road decommissioning to year 2023 (USDI BLM 2015, p. 318). The BLM typically makes decisions on whether to make specific existing roads open or closed to public motorized access through implementation-level travel management planning (**Appendix X** – Guidance for Use of the Completed RMPs) and typically makes decision on whether to decommission specific existing roads through project-level planning and analysis. The Draft RMP/EIS included estimates of new road construction under the alternatives and analyzed the effect of this new road construction. All alternatives would construct little new road mileage compared to the existing road network and would make little contribution to existing sediment delivery to streams (USDI BLM 2015, pp. 230–233, 313–318, 648–650). The alternatives in the Draft RMP/EIS all included limitations on road construction through management direction and Best Management Practices. The Draft RMP/EIS included Best Management Practices for road stormproofing and road closure and decommissioning (USDI BLM 2015, pp. 1151–1153).

205. Comment Summary: The gross geomorphic effects of different hydrological features with dispersed increases in magnitude might be small due to resilience of channels (Grant *et al.* 2008); however, a variety of effects (fine sediment transport, reduced streambank stability, reduced large wood retention) may result in significant effects to ESA-listed fish habitat at the stream reach scale.

Response: It is not possible, given the scope and scale of the RMP revision, to analyze the effects of the alternatives at the stream reach scale. The Draft RMP/EIS discussed how each of these effects could affect fish habitat at finer scales. However, the BLM necessarily conducted the detailed, quantified analysis in the Draft RMP/EIS of the effects of the alternatives on sediment delivery, peak stream flows, and wood supply to streams at broad spatial scales. That analysis concluded that new road construction under all alternatives would add less than 1 percent to the sediment yield from the existing road system (USDI BLM 2015, p. 315–318). Less than 1 percent of the decision area would be susceptible to peak flow increases under any of the alternatives (USDI BLM 2015, pp. 298–306).

All alternatives would increase the wood supply to streams from the current conditions (USDI BLM 2015, pp. 219–230). The Draft RMP/EIS acknowledged the possibility of differences in effects at the stream reach scale. For example, the analysis of wood supply detailed there are differences in the design of the alternatives (specifically, Riparian Reserve widths, inner zone widths, and management direction for Riparian Reserve thinning) that may have differential effects on potential wood contribution that the BLM cannot quantitatively evaluate at this scale of analysis (USDI BLM 2015, pp. 228–230). The commenter does not provide any explanation of how the BLM could conduct such analyses for an RMP revision, given the information available and the nature of the proposed action, at the stream reach scale. The BLM has designed the Proposed RMP to reduce the risk of adverse effects to ESA-listed fish and water quality. Although there may be some variation in the effects from reach to reach, the Proposed RMP would result in only minor adverse effects or wholly beneficial effects on ESA-listed fish and water quality (see the Fisheries and Hydrology sections of Chapter 3).

206. Comment Summary: The DEIS does not address the likely effects of fire management on riparian and aquatic habitat, particularly in regards to sediment production, riparian forest condition, effects of post-fire salvage logging and increased road construction.

Response: It is not clear what aspects of fire management the commenter believes would have effects on riparian and aquatic habitat that the BLM did not analyze in the Draft RMP/EIS. The only management actions the commenter specifies are post-fire salvage logging and increased road construction.

The only alternative that would allow salvage logging within the Riparian Reserve is the No Action alternative. Under all of the action alternatives, there would be no salvage logging after fires in the Riparian Reserve, except when necessary to protect public safety, or to keep roads and other infrastructure clear of debris. Salvage logging outside of the Riparian Reserve would have the same effects on riparian and aquatic habitat as green tree harvest. The analysis did specifically include post-fire salvage harvest in the vegetation modeling (USDI BLM 2015, pp. 98–100). Under all alternatives, the inner zone of the Riparian Reserve would provide effective sediment filtration and ensure that upslope timber harvest would not result in sediment delivery to streams (USDI BLM 2015, p. 317).

The Draft RMP/EIS analyzed the effect of new road construction; all alternatives would construct little new road mileage compared to the existing road network and would make little contribution to existing sediment delivery to streams (Draft RMP/EIS, pp. 230–233, 313–318, 648–650). The road construction necessary to implement salvage logging under the alternatives is included in this analysis of new road construction.

The Draft RMP/EIS incorporated a quantified and spatially explicit prediction of wildfire and post-fire salvage harvest under the alternatives. This detailed information was included in the analysis of effects. The BLM has addressed all significant effects of salvage logging or attendant new road construction on riparian and aquatic habitat in the analysis.

207. Comment Summary: BLM cannot extend the questionable "improving trend" in AREMP monitoring results because these results represent only the first twenty years of ACS implementation. As all BLM action alternatives remove ACS protections, the BLM cannot claim that any improving trends in watershed conditions, even if real, will continue, as the improving trend depends on full ACS implementation moving forward.

Response: The commenter is mistaken in implying the analysis in the Draft RMP/EIS extended the AREMP monitoring results into the future. The AREMP monitoring program is ongoing and current results show increases in watershed condition scores as well as stream characteristics (e.g., stream substrate percent fines, substrate size, and macroinvertebrate assemblages that indicate improving watershed health). The Draft RMP/EIS summarized these monitoring reports in describing the current condition of watershed resources (USDI BLM 2015, p. 223). The Draft RMP/EIS analyzed the effects on future conditions, such as stream shading, sediment delivery, and wood delivery potential, through analytical methodologies and modeling described in detail in the Draft RMP/EIS (USDI BLM 2015, pp. 217–235, 286–320). The Draft RMP/EIS compares the effects of all alternatives, including the No Action alternative (which includes the Aquatic Conservation Strategy), on these watershed resources. There is no basis for the commenter's assertion that the BLM has extended the monitoring results into the future.

Invasive Species

208. Comment Summary: The EIS should include a complete evaluation of how artificial fertilizer application for increased tree growth might support the growth of exotic plants.

Response: The Proposed RMP/Final EIS includes a discussion about non-native invasive plant response to forest management fertilization treatments. This discussion is added to the summary of analytical methods for the Invasive Plants section of Chapter 3.

209. Comment Summary: The EIS should address threats to North American ash trees from the emerald ash borer and to chinkapin from newly introduced pathogens.

Response: There are many forest pests and pathogens within the planning area or within the State of Oregon, including the emerald ash borer and chinquapin disease mentioned. The BLM manages infested or infected forests through forest stand manipulation as appropriate to the pest or pathogen. Eradication is not always possible. For many of these forest pests and pathogens, forest stand manipulation is the only feasible management tool for control. As such, management for most forest pests and pathogens would not vary by alternative, and analysis of the effect of the alternatives on these forest pests and pathogens would not be informative. The Proposed RMP/Final EIS includes management direction to manage forested stands for infestations.

210. Comment Summary: The EIS should address management of Port-Orford-Cedar (POC) in forested stands within the planning area. The EIS should also conduct up to date relevant spatial analysis of spread and consequences of POC root disease.

Response: The Proposed RMP/Final EIS addresses Port-Orford-cedar (POC) management in Chapter 1. The Proposed RMP directs for management of Port-Orford-cedar in accordance with the Record of Decision and Resource Management Plan Amendment of Management of Port-Orford-Cedar in Southwest Oregon, Coos Bay, Medford, and Roseburg District (USDI BLM 2004). BLM acknowledges that some POC root disease has spread since 2004. However, this FEIS and ROD conceptual framework, vectors of disease spread and management practices are still relevant. The Port-Orford-cedar ROD includes a Risk Key for site-specific analysis to determine where to apply risk reduction practices (USDI BLM 2004, pp. 32–37). Management for POC root disease would not

vary by alternative and analysis of the influence of the alternatives on POC root disease would not be informative.

211. Comment Summary: The EIS undermines BLM policy objectives for the management of invasive species and riparian habitats as is evidenced by analysis (pp. 332–335) stating that disturbances associated with Riparian Reserve logging will make "riparian habitats more susceptible to the introduction and spread of invasive plants."

Response: The Draft RMP/EIS analyzes the relative risk of introducing and spreading invasive plant introductions from the differing alternatives. Risk is not synonymous to likelihood. Project design and mitigations applied at project-level implementation planning influence the likelihood of invasive plant introduction and spread. The Proposed RMP/Final EIS includes management direction to address prevention and management of invasive plant infestations in implementation project design (**Appendix B** – Management Objectives and Direction). The Proposed RMP/Final EIS also incorporates the analysis for the Vegetation Treatments Using Herbicides on BLM Lands in Oregon Record of Decision (USDI BLM 2010). This Record of Decision addresses mitigation and control methods available for use in the event of an introduction.

212. Comment Summary: The EIS fails to prioritize invasive plants adequately.

Response: The Draft RMP/EIS does not include a prioritization of invasive plant species for management because there are no BLM policies, State or Federal regulations directing for a prioritization of invasive plant species in land use plans. The BLM districts recognize the Oregon Department of Agriculture's Noxious Weed Control Policy and Classification System, which prioritizes listed noxious weed species at the statewide level. BLM Manual 9015 – Integrated Weed Management (USDI BLM 1992) provides guidance for setting management priorities by developing weed management plans and using a classification system to provide weed management emphasis priorities. The BLM most effectively prioritizes invasive plant species at the field office level and develops annual weed management plans. The Draft RMP/EIS intentionally does not include priorities for invasive plant species.

213. Comment Summary: The EIS fails to restrict herbicides adequately.

Response: The EIS addresses the parameters for application of herbicides in Chapter 1. The Draft RMP/EIS incorporates the analysis for the Vegetation Treatments Using Herbicides on BLM Lands in Oregon Record of Decision (USDI BLM 2010). The commenter does not allege or substantiate that the 2010 BLM Record of Decision is inadequate.

214. Comment Summary: The EIS fails to consider general recreational uses and OHV use, including illegal use, in its analysis of invasive species.

Response: The Draft RMP/EIS does consider recreation and OHV use in the analysis of invasive species. The Draft RMP/EIS incorporates invasive plant analytical assumptions from the Planning Criteria (USDI BLM 2014, pp. 90–98), into analysis for invasive plants in Chapter 3. These analytical assumptions include identification of locations and activities influencing invasive species introduction and spread, including several assumptions about recreation use and OHV use. In addition, Chapter 3 provides a discussion about illegal OHV use in the invasive plant analysis identifying that BLM lacks

a basis for characterizing current illegal OHV use or for forecasting illegal OHV use at the scale of the planning area.

215. Comment Summary: The EIS fails to include data or research to support analysis of grazing impacts on invasive species.

Response: The Draft RMP/EIS does incorporate extensive data and research to support the analysis of grazing impacts on invasive species. The EIS incorporates the analysis for the Vegetation Treatments Using Herbicides on BLM Lands in Oregon Record of Decision (USDI BLM 2010) in its analysis of invasive species. Changes included in the Invasive Plants section of Chapter 3 identify presence of invasive plant species in the areas available for livestock grazing, and provide citations supporting assumptions about the risk of invasive plant species introduction and spread associated with livestock grazing.

Lands and Realty

216. Comment Summary: It is not clear how valid existing water rights and irrigation ditch rights would be affected by designation of Right-of-Way avoidance areas and Right-of-Way exclusion areas under the alternatives.

Response: Considering the intermingled nature of the BLM-administered lands in the planning area, the BLM has granted many rights-of-way, leases, permits, and other established legal rights within the decision area over the years. Valid existing rights may pertain to timber sale contracts, mining claims, mineral or energy leases, leases, easements, permits, rights-of-way, and water rights. As explained in the Draft RMP/EIS, designation of right-of-way avoidance areas and right-of-way exclusion areas would guide BLM decisions on future right-of-way requests (USDI BLM 2015, p. 366). The decisions in the RMPs, including designation of right-of-way avoidance areas and right-of-way exclusion areas, would not alter or extinguish valid existing rights on BLM-administered lands. Valid existing rights take precedence over the decisions in the RMPs.

Lands with Wilderness Characteristics

217. Comment Summary: Kerby Peak possesses wilderness characteristics and should be protected as potential Wilderness Area.

Response: As required under the FLPMA and current BLM policy, the BLM updated the wilderness characteristics inventories for western Oregon as part of this plan revision. In conducting these inventories, western Oregon BLM districts followed the guidance provided in BLM Manual 6310 – Conducting Wilderness Characteristics Inventory on BLM Lands (USDI BLM 2012). This manual provides a process for identifying BLM lands that meet the following criteria: (1) encompass at least 5,000 acres of roadless, contiguous BLM lands, (2) appear to be in a natural condition; (3) provide outstanding opportunities for solitude or primitive and unconfined recreation.

To launch this inventory update, the BLM held a two-day workshop in Roseburg, Oregon, during August 2012. The workshop focused on an initial screening of the planning area to identify all areas that could potentially meet the minimum size criteria. Geographic

Information System (GIS) data were used to (1) identify BLM-administered lands that met the size criteria and (2) screen areas that met the size criteria for the absence of roads meeting wilderness inventory criteria as identified as part of the BLM's Ground Transportation Network. Based on the outcomes of this screening, western Oregon districts began inventories during the summer of 2012.

Kerby Peak does not encompass at least 5,000 acres of roadless, contiguous Federal lands and, as such, was not inventoried for wilderness characteristics during this update.

218. Comment Summary: The BLM should designate all lands that possess wilderness characteristics as Wilderness Study Areas (WSA), and protect the identified wilderness values from management activities that would impair them.

Response: The BLM's authority to designate additional lands as Wilderness Study Areas expired on October 21, 1993, as affirmed in the agreement that BLM affirmed in the *Utah v. Norton* wilderness settlement agreement (April 2003).

219. Comment Summary: The Thompson Cantrall Extensive Recreation Management Area (ERMA) overlaps with the Burton Ninemile Lands with Wilderness Characteristics unit and should be designated as a *closed* OHV Management Area.

Response: The Proposed RMP maintains 6,103 acres of lands with wilderness characteristics within the Burton Nine Mile unit. Management direction to protect lands with wilderness characteristics includes designating these areas as *closed* for public motorized access (**Appendix B** – Management Objectives and Direction). The Thompson Cantrall ERMA management framework under the Proposed RMP would also be designated as a *closed* for public motorized access where the ERMA overlaps with lands with wilderness characteristics within the Burton Ninemile unit.

220. Comment Summary: The Proposed RMP should protect the four lands with wilderness characteristics units that were identified in the Applegate Valley (Wellington Butte, Dakubetede, Burton Ninemile, and Round Mountain). Specifically, these four areas should be designated as *closed* OHV Management Areas. Additionally, China Gulch was identified as an area that possesses wilderness characteristics and should be designated as a *closed* OHV Management Area. China Gulch and Wellington lands with wilderness characteristics should be protected. Any future management activities that would diminish wilderness characteristics should be prohibited.

Response: Under the Proposed RMP, the BLM would manage all inventoried lands with wilderness characteristics that occur outside of the Harvest Land Base for their wilderness characteristics, including the Burton Ninemile (6,103 acres) and Roundtop Mountain (5,295 acres) units. Because of the incompatibility between managing for wilderness characteristics and sustained-yield timber harvest, removal of Harvest Land Base acres causes the Dakubetede and Wellington units to fall below the 5,000-acre minimum size threshold in the Proposed RMP.

221. Comment Summary: The Wellington Butte lands with wilderness characteristics unit should be expanded to include the entire headwaters of China Gulch.

Response: The BLM, Medford District Office, completed a wilderness characteristics inventory evaluation for Wellington Butte. The Wellington wilderness characteristics inventory identified a contiguous mostly un-entered block of public lands within the middle Applegate watershed. It encompasses Wellington Butte in the heart of the area; Sugarloaf, to the northwest of Wellington; the headwaters of Long Gulch draining into the Applegate River to the south; all of the headwaters of Balls Branch, which drains into Humbug Creek to the west; and the west slopes of Mt. Isabelle. The wilderness characteristics inventory examined the area including the headwaters of China Gulch and found that this additional landbase did not possess wilderness characteristics. See Wellington Mountain wilderness characteristics inventory (USDI BLM 2013) for additional inventory information.

Livestock Grazing

222. Comment Summary: Grazing acre reductions outlined in the RMP should be prioritized to Riparian Reserve and stream buffers. Key ecosystem attributes should be monitored in areas where grazing is continued to ascertain whether continued use is consistent with ecological recovery, particularly as the climate shifts (Beschta *et al*. 2012).

Response: For all alternatives except Alternative D, the BLM only considered livestock grazing acre reductions as correlated to allotment-scale decisions on availability for livestock grazing. These boundaries are set based on fences and topography, which keep livestock within an area. Topography, exclosures, and riparian pastures to manage livestock and promote ecological health buffer a large majority of streams within existing allotments from livestock use. The Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington (USDI BLM 1997) rigorously assess key ecosystem attributes at the allotment scale to determine if the fundamentals of rangeland health including physical function and biological health with elements of law relating to water quality, and plant and animal populations and communities are making significant progress toward being met or are being met. The BLM establishes short-term and long-term monitoring sites throughout allotments to continue to provide updated information on rangeland health. The Draft RMP/EIS discussed permitted livestock grazing levels of use in the analysis of Climate Change under issue 2 (USDI BLM 2015, pp. 136–140).

Under Alternative D, the BLM would terminate existing livestock grazing authorizations and make all allotments unavailable for livestock grazing. In the analysis of Alternative D, the Draft RMP/EIS addressed the effects of no livestock grazing in the decision area (USDI BLM 2015, pp. 379–388).

223. Comment Summary: The EIS does not identify each stream critical habitat reach for federally listed fishes and failed to identify how grazing would be changed to protect and improve critical habitat.

Response: The EIS considered rangeland health within each livestock grazing allotment (**Appendix L** – Livestock Grazing), which takes into consideration effects of livestock grazing within critical habitat of native, threatened and endangered, and locally important species. Additionally, consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service regulate livestock grazing and monitoring efforts of ESA-listed fish species within riparian areas to maintain critical habitat. Rangeland health assessments use all available science and monitoring data including

condition and trend analysis. The BLM makes specific changes in livestock grazing and AUMs at allotment-specific scales when necessary based upon extensive monitoring.

224. Comment Summary: Alternatives that eliminate livestock grazing by closing allotments to livestock grazing and terminating existing grazing authorizations are is in violation of several laws. Termination of grazing on BLM lands would render private lands as unavailable for livestock grazing.

Response: BLM Land Use Planning Handbook H-1610-1 states that the primary purpose of the land use plan is to make land use allocation decisions including identifying lands to be made available or unavailable for livestock grazing (USDI BLM 2008 pp. Appendix C, II-B). Making livestock grazing unavailable within an alternative of a land use plan is consistent with the FLPMA land use planning, taking into consideration the present and potential uses of public lands. Alternatives A, B, and C, and the Proposed RMP do not terminate any existing livestock grazing authorizations, as these allotments are currently vacant with no current parties proposing to graze. The NEPA process requires the BLM to provide an appropriate range of alternatives in the analysis. Alternative D provides a broad range of potential management options coinciding with a larger range for analysis purposes. The possibility of livestock grazing on allotments could occur through a special use permit, or special agreement with the BLM under any alternative. The BLM does recognize decisions to make allotments unavailable for livestock grazing may, in some situations, make private land livestock grazing difficult but does not make any decisions on private lands as unavailable. None of the alternatives would make a decision concerning private lands and do not prohibit fencing on private land.

225. Comment Summary: The EIS includes management of recreation that is detrimental to livestock grazing. Why was the Lost Lake ACEC not to be considered for open to grazing with stipulations?

Response: Additional considerations and analysis were included in the Livestock Grazing section with reference to potential effects of a proposed SRMA to acres of available livestock grazing. The Lost Creek ACEC/RNA represents an Oregon Natural Areas Plan (ONAP 2015) cell for a mid-montaine lake surrounded by mixed-conifer forest. It is an example of a landslide-damned lake. Long-term vegetation monitoring plots established in the RNA provide research value as a baseline for the Oregon Natural Areas Plan cells this ACEC/RNA represents. Livestock grazing, even with stipulations, would degrade the research value of the Lost Creek ACEC/RNA.

226. Comment Summary: The grazing section contains inaccuracies and fails to provide information in a manner that allow the public to understand current grazing management and proposed grazing changes. No alternative was considered to increase grazing use. The grazing background section cites regulations that are not correct.

Response: The Draft RMP/EIS reported AUMs based on available database information. The BLM corrected discrepancies in AUMs on permits and AUMs available within the range database system in the Proposed RMP/Final EIS (see the Livestock Grazing section of Chapter 3). The BLM also updated information on suspended use in the Proposed RMP/Final EIS. **Appendix L** – Livestock Grazing includes all AUMs, including active use and suspended use. Suspended use otherwise was not included in the analysis as these are AUMs not available for use until more site-specific NEPA shows forage capacity for them. The purpose of the land use planning process is only to identify allotments as available or unavailable to livestock grazing; site-specific NEPA analysis would be

required for the BLM to increase AUMs on individual allotments. The BLM revised the Proposed RMP/Final EIS with the appropriate livestock grazing regulations in the Background section.

227. Comment Summary: The EIS fails to identify that livestock grazing can also be used to control invasive species, reduce fire danger, and accomplish management objectives. The EIS fails to include BMPs to address upland water development for grazing.

Response: Although the RMP designates allotments as available or unavailable for livestock grazing, this does not limit the use of livestock grazing as a management tool to obtain other management objectives within tiered NEPA analysis. Typically, the BLM directs the use of livestock grazing as a tool to obtain specific management objectives through site-specific project planning and analysis. The invasive species program has a statewide EIS for managing invasive species with districts to complete specific EAs on the implementation of treatment options, which could include livestock grazing. Best Management Practices (**Appendix J** – Best Management Practices) provide compliance with the Clean Water Act of 1972 and set out goals and objectives to maintain water quality. Development of range improvements is more a management tool for livestock grazing. Conditions for range improvements are provided for in 43 CFR 4120.3. **Appendix B** – Management Objectives and Direction contains management direction specific to the design and maintenance of range watersource infrastructure. Any range improvement would require more site-specific project planning and analysis.

Minerals

228. Comment Summary: The BLM should complete the formal Mineral Potential Report and make the report available for public review as soon as possible. **Appendix L** was lacking in specific information about the locations of lands available for locatable mineral entry in the Medford District - specifically metals.

Response: The BLM did not complete reasonably foreseeable development scenarios and Mineral Potential Reports for this RMP revision. The BLM based all estimates on broad scaled "trends" review, which is an opinion as opposed to a methodological approach. As clearly stated in the Draft RMP/EIS, the RMP revision would only make recommendations for withdrawals, and the BLM would prepare mineral potential reports prior to each recommended withdrawal proposal (USDI BLM 2015, pp. 398–399).

229. Comment Summary: Will areas that are closed to mineral entry, such as Wilderness Areas, Wild and Scenic river segments, and some ACECs and RMAs, be protected from all mining operations?

Response: The RMP would close specific areas to salable mineral development (e.g., rock quarry development), as described in the Draft RMP/EIS (USDI BLM 2015, pp. 391–397). The RMP would make recommendations about withdrawal of specific areas to locatable mineral entry, but it is not within the authority of the BLM to make the withdrawals (USDI BLM 2015, pp. 398–403). The RMP would provide stipulations for leasable mineral development in specific areas, but would not close areas to leasing (USDI BLM 2015, pp. 403–404).

The decisions in the RMPs will not alter or extinguish valid existing rights on BLM-administered lands. Valid existing rights take precedence over the decisions in the RMPs. Authorization for

implementing an action that would affect these valid existing rights may be subject to approval by the holders of valid existing rights and may not be discretionary to BLM.

230. Comment Summary: The BLM should investigate the possibility of keeping records on material extracted from mining efforts. Something should be done to help pay for the environmental damage being done if it is not reclaimed. If it is reclaimed, the money could be refunded to the operator. I don't know if this would be possible under the 1872 mining law but it should be researched.

Response: Record-keeping requirements for individual mining operations would be beyond the scope of the RMP revision. The BLM surface regulations for mining require that operators submit to the BLM an adequate financial guarantee for all Notices or Plans of Operations until the site is reclaimed.

231. Comment Summary: Close and rehabilitate rock quarry sites that are close to depletion.

Response: The Proposed RMP includes management direction to reclaim quarries following the approved mining and reclamation plan. The BLM typically does not reclaim rock quarry sites that are close to depletion because of the potential for future use.

232. Comment Summary: Develop an inventory of rock quarry sites with current value and viability.

Response: The BLM does have an inventory of rock quarry sites, and the Draft RMP/EIS described the currently developed quarry sites (USDI BLM 2015, pp. 392–395). The Proposed RMP/Final EIS updated the inventory of currently developed rock quarry sites based on additional information (see the Minerals section of Chapter 3). Additionally, there are historical borrow sites throughout the decision area that have not been recorded. As noted in the Draft RMP/EIS, the BLM does not have an inventory of *potential* quarry sites, which would be exorbitantly expensive to develop for the decision area and would require substantial speculation, given the myriad factors that influence potential quarry development.

National Recreation Trails

233. Comment Summary: The BLM should consider management direction that protects the Pacific Crest Trail by limiting recreational and commercial uses only to those that would not adversely affect PCT values and resources. This would include prohibiting or allowing races, endurance events, and fundraising.

Response: The BLM established management direction in the Proposed RMP that protects the values and uses, recreation setting characteristics and the established recreation outcome objectives for the Pacific Crest National Scenic Trail Special Recreation Management Area. The BLM developed the Proposed RMP to include management direction that would prohibit Special Recreation Permits that could potentially affect Pacific Crest Trail values and resources (**Appendix B** – Management Objectives and Direction).

234. Comment Summary: The corridor width identified in Alternative B is insufficient to protect the Pacific Crest Trail and is inconsistent to managing for a foreground corridor. A 1-mile wide trail

management corridor would result in a 1/2 mile on each side of the trail and therefore capture the foreground as well as maintain a consistent management with adjoining land management agencies.

Response: The Proposed RMP includes a 1-mile wide corridor along the portions of the Pacific Crest National Scenic Trail in the decision area.

235. Comment Summary: The viewshed analysis done for the Pacific Crest National Scenic Trail is incomplete. The BLM should revise the viewshed analysis to include lands managed by the USFS. This will allow analysis to consider, in addition, the current percentage of lands within the viewshed managed by an agency also holding responsibility for management of the Pacific Crest National Scenic Trail.

Response: The Proposed RMP/Final EIS has added an updated viewshed analysis that includes all U.S. Forest Service lands (see the National Trails System section of Chapter 3).

Rare Plants and Fungi

236. Comment Summary: The section on the effects of timber harvest on rare species needs to identify, clearly, what criteria would be used to determine if Bureau Sensitive plant protection is consistent with timber production. Without clear definitions in the RMP, land managers and other entities can dismiss Bureau Special Status designations in the field.

Response: The Bureau Special Status Species policy directs that the BLM address Bureau Sensitive species and their habitats in the planning process, and, when appropriate, identify and resolve significant land use conflicts with Bureau Sensitive species. In implementing a new RMP, the BLM would ensure that actions affecting Bureau Sensitive species would be carried out in a way that is consistent with its objectives for managing those species and their habitats at the appropriate spatial scale. The application of the Bureau Special Status Species policy to provide specific protection to species that are listed as Bureau Sensitive on lands governed by the O&C Act must be consistent with timber production as the dominant use of those lands (USDI BLM 2008, BLM Manual 6840 – Special Status Species Management, sections 6840.06.2A – 6840.06.2E). The action alternatives and the Proposed RMP provide discretion for individual BLM implementation decisions regarding Bureau Sensitive species and their habitats. The determination of when specific protections to Bureau Sensitive species on O&C lands are not consistent with timber production as the dominant use of those lands is a determination best made at the project and site level. The Draft RMP/EIS analysis assumes that the BLM will implement the BLM Special Status Species policy for Bureau Sensitive species, and the commenter provides no foundation for their assertion that managers would "dismiss" Bureau Sensitive species.

237. Comment Summary: Population augmentation for threatened and endangered plants and oak stand management needs to be included in all alternatives in order to meet BLM policy.

Response: The Proposed RMP includes population augmentation for threatened and endangered plants and oak stand management.

238. Comment Summary: The USFWS recommends specific management activities to contribute to the conservation and recovery of the endangered western lily.

Response: Management direction common to all alternatives and the Proposed RMP would require the BLM to manage ESA-listed plant species consistent with recovery plans and designated critical habitat, including the protection and restoration of habitat; altering the type, timing, and intensity of actions, and other strategies designed to recover populations of species. The Proposed RMP includes additional management direction designed to contribute to the conservation and recovery of all ESA-listed plant species, including western lily. The proposed management direction would require the BLM to manage habitat to maintain populations of ESA-listed, proposed, and candidate plant species and to maintain or restore natural processes, native species composition, and vegetation structure in natural communities, consistent with the recommendations of the commenter.

239. Comment Summary: According to the EIS-volume I page 436-the impacts from grazing on Gentner's fritillary would be minimal, but other species were not discussed.

Response: The Proposed RMP/Final EIS has added text to clarify that Gentner's fritillary is the only ESA-listed plant species present in any grazing allotment. The Proposed RMP/Final EIS has also added text to address potential grazing impacts to other Bureau Special Status plant and fungi species (see the Rare Plants and Fungi section of Chapter 3).

240. Comment Summary: The effects from invasive species on Endangered, Listed, and Bureau Sensitive plants caused by grazing in open allotments was not analyzed other than speculative statements on page 436-vol 1.

Response: The BLM addressed the effect of grazing on the introduction and spread of invasive species in the Invasive Species section of Chapter 3 in the DEIS. The Draft RMP/EIS stated that elimination of grazing would result in increased competition. The Proposed RMP/Final EIS has added text to clarify that competition refers to increased production of non-native plant species, including noxious weeds, which compete for resources with Bureau Special Status plants (see the Invasive Species section of Chapter 3).

241. Comment Summary: RMP needs to acknowledge that loss of host trees and changes in forest conditions has direct and indirect impacts on rare plants and fungi.

Response: The Proposed RMP/Final EIS has included text to address direct and indirect impacts of the loss of host trees on rare plants and fungi (see the Rare Plants and Fungi section of Chapter 3).

242. Comment Summary: RMP inaccurately states that prescribed burning rarely consumes duff, snags, or large logs, when in fact prescribed burning can consume all downed woody debris and burn 20 feet up logs.

Response: The Proposed RMP/Final EIS has revised this discussion to acknowledge that prescribed burning can and does sometimes result in the consumption of downed woody debris and impacts to soil (see the Rare Plants and Fungi section of Chapter 3).

243. Comment Summary: The BLM should remove the reference to Dahlberg and Stenlid on page 416 about sporocarps because it is misleading. The presence of fruiting bodies is very important because it demonstrates that a species exists in that location, regardless of the activity or location of underground mycelia. The purpose of these surveys is simply to ascertain whether certain species occur in the areas being surveyed.

Response: The BLM did not intend to imply that surveys for fungi are not useful in determining species presence. The Proposed RMP/Final EIS has revised this statement to clarify that visual observation cannot determine the extent of a fungal population, but the presence of sporocarps demonstrates that the species is present (see the Rare Plants and Fungi section of Chapter 3).

244. Comment Summary: "Opportunistic" fungal surveys need to be more clearly defined and the EIS should demonstrate that "opportunistic" surveys would be effective in finding rare fungal species. If such surveys are inadequate, the proposed timber harvest in all action alternatives could contribute to the need to list Sensitive fungi.

Response: The Draft RMP/EIS used the word "opportunistic" to refer to surveys for fungi that are incidental to surveys for Bureau Special Status plants (USDI BLM 2015, p. 423). The Proposed RMP/Final EIS has replaced this word with language to clarify how and when the BLM would survey for fungi and that the BLM Manual 6840 – Special Status Species Management (USDI BLM 2008) would apply to all alternatives (see the Rare Plants and Fungi section in Chapter 3). The Proposed RMP/Final EIS has added discussion to illustrate how surveys for most fungi, including Bureau Sensitive and Survey and Manage species, are considered impractical and acknowledge that impacts are likely to occur to undocumented sites of rare and Bureau Sensitive fungi. The discussion in the Proposed RMP/Final EIS details that the Proposed RMP would protect most existing habitat for rare and Bureau Sensitive fungi species, would protect most known sites within the reserve allocations, and would result in an increase in the amount of habitat for rare and Bureau Sensitive fungi species (see the Rare Plants and Fungi section in Chapter 3). The commenter's assertion that the proposed timber harvest in all action alternatives could lead to the "need to list Sensitive fungi" is contrary to the conclusions of the analysis in the Proposed RMP/Final EIS and is predicated on unsupported speculation.

245. Comment Summary: Surveys for rare and Sensitive fungi need to be carried out in forests younger than 180 years old as well as in older forests. The BLM assumed that timber activities would not affect Survey and Manage plant and fungi sites directly in the No Action alternative because of pre-disturbance surveys and site protection. This does not take into account the fact that only old stands are surveyed. Unless surveys are carried out, timber harvest activities will affect these species. This needs to be acknowledged and the effects analyzed in the EIS.

Response: Under the No Action alternative, the BLM would manage Survey and Manage species in accordance with the current Survey and Manage requirements. Most Survey and Manage fungi species are on the Category B list (i.e., pre-disturbance surveys not practical). Under the No Action alternative, the BLM would conduct 'equivalent effort' surveys for Survey and Manage fungi species for habitat disturbing activities within old-growth forests as defined by the 2000 Final Supplemental EIS for Amendment to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines (USDA FS and USDI BLM 2000). The Proposed RMP/Final EIS has added discussion to illustrate how surveys for most fungi, including Sensitive and Survey and Manage species, are considered impractical and acknowledge that impacts are likely to occur to undocumented sites of rare and Bureau Sensitive fungi.

Recreation and Visitor Services

246. Comment Summary: The Recreation Management Areas that are proposed in the preferred alternative (Alternative B) need to be adjusted to include additional Recreation Management Areas proposed in Alternatives C and/or D.

Response: The BLM identified Alternative B as the preferred alternative in the Draft RMP/EIS. However, Alternative B does not provide the best possible response to the purpose and need of providing recreation opportunities.

Recognizing this, the BLM has developed a Proposed RMP that increases protection of the unique recreation settings and increases recreation use. To increase protection of unique recreation settings and increase recreation use compared to Alternative B, the Proposed RMP includes an approach to the management of recreation resources modified from Alternative C.

Appendix O – Recreation provides a comprehensive list of recreation management areas that the BLM is designating under the Proposed RMP. Recreation Management Frameworks describe the important recreation values, recreation outcome objectives, supporting management actions and allowable use activities for each recreation management area evaluated. The Recreation Management Frameworks also describe the types of visitor use for which the BLM would be managing recreation in that recreation management area.

247. Comment Summary: Table 3-127 Activity Specific Recreation demand for western Oregon communities is inaccurate.

Response: The Draft RMP/EIS presented the activity-specific demand percentages generated from individuals who participated in the BLM's interactive mapping site during the winter of 2012 (USDI BLM 2015, p. 450). This percentage is specific to those participants that responded to the interactive mapping tool.

248. Comment Summary: Access categories should be clearly delineated in recreation analysis due to legal access and right-of-way implications.

Response: In all action alternatives, the BLM only proposed recreation management areas where the BLM has legal public access. The BLM identified this requirement in the Planning Criteria (USDI BLM 2014, p. 110). Since reciprocal right-of-way agreements and some gating on BLM and adjacent private lands can prevent visitors from accessing BLM-administered lands for recreation use, the BLM first conducted an inventory to determine which BLM-administered lands are legally accessible to the public.

249. Comment Summary: In the interest of public safety, the RMP should make a management commitment to significantly increase law enforcement efforts to enforce target shooting rules. RMP management guidelines for target shooting need to be more specific. Creation of no-shooting buffers at trail heads and along trail corridors, both motorized and non-motorized is essential for public safety. Given the nature of the terrain and vegetation in western Oregon, uncontrolled shooting on

public lands poses a serious threat to recreation users and residents of adjacent lands. Exploding targets such as Tannerite should be banned completely on all Western Oregon BLM lands.

Response: Recreation Management Area frameworks contained in **Appendix O** – Recreation identify and establish target-shooting restrictions for individual recreation areas. This includes areas identified for trail-based recreation, both motorized and non-motorized. The BLM has established these restrictions to protect recreation settings, achieve recreation specific outcome objectives, and account for public health- and safety-related concerns. The BLM has not established target shooting restrictions on BLM-administered lands outside of proposed recreation management areas. The BLM would evaluate additional target shooting restrictions, such as banning exploding targets, during implementation-level recreation management planning under all alternatives.

250. Comment Summary: Any Designation for OHV use in the Timber Mountain area is not appropriate. The existing conditions make the area unsuitable for development of OHV use.

Response: Under the Proposed RMP, the BLM has designated the Timber Mountain Recreation Management as *limited* for public motorized access in order to limit environmental impacts from OHV use. The BLM would determine the specific routes and trails that would be open to public motorized vehicle use through implementation-level travel management planning subsequent to the RMP revision (**Appendix X** – Guidance for Use of the Completed RMPs).

The designation of specific routes and trails in implementation-level travel management planning would be consistent with the criteria outlined under BLM's regulatory requirements in 43 CFR 8342.1. These designation criteria require that trails be located to—

a) Minimize damage to soil, watershed, vegetation, air, or other resources of the public lands;
b) Minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats; and
c) Minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

Socioeconomics

251. Comment Summary: The Draft RMP/Draft EIS failed to quantify many economic benefits of conservation.

Response: The Draft RMP/EIS analyzed the relationship between the alternatives and the value of ecosystem goods and services associated with BLM-administered lands in Issue 1 of the Socioeconomics section (USDI BLM 2015, pp. 478–526). The Proposed RMP/Final EIS includes more discussion of the economic importance of non-market benefits to Oregonians and the regional economy.

The analysis includes both market and non-market measures of value. Where reliable data are available, the analysis described values in monetary units. Where data are insufficient to allow for reliable estimation in monetary units, the analysis describes the value qualitatively, focusing on factors that would influence the direction, magnitude, and timing of change in value.

The BLM based the analysis of value on the underlying physical changes in ecosystems under each alternative, compared to current conditions, as described in the other resource sections of the Draft RMP/EIS. Thus, if a resource section did not identify variation among alternatives, such as water quality, for example, the analysis in the socioeconomic section of the value of the good or service associated with that resource also did not show variation. The affected environment described, and where data are available, quantified, the value of the resource under current conditions.

252. Comment Summary: The Draft RMP/Draft EIS failed to relate market and non-market economic values.

Response: The BLM has updated the presentation of the market and non-market values analysis in Issue 1 of the Socioeconomics section of the Proposed RMP/Final EIS to clarify how the BLM estimated the market and non-market values of ecosystem services, and what the values mean in the context of the alternatives and the Proposed RMP.

The Draft RMP/EIS presented the value of ecosystem goods and services in two broad categories: those traded in markets (market values), and those not traded in markets (non-market values) (USDI BLM 2015, pp. 478–526). The Draft RMP/EIS assessed the value of goods and services traded in markets using the market price people are willing to pay for them (e.g., stumpage prices). The Draft RMP/EIS assessed the value of goods and services not traded in markets using other measures of willingness to pay, derived using scientifically validated and professionally accepted techniques outlined in official BLM guidance for estimating non-market values (USDI BLM 2013a).

These non-market valuation techniques result in monetary estimates for non-market goods and services that are comparable to market-based prices. These values are comparable insofar as they both reflect changes in society's overall economic well-being. However, they are not comparable in how they contribute to the fiscal status of the economy. By definition, market values are associated with monetary transactions that have real financial impacts in communities. Non-market values reflect the importance people place on goods and services for which they do not have to pay real money, and estimate likely payments if market conditions did exist, such as if the BLM charged people what they were willing to pay to use outdoor recreation resources. People's interactions with these non-market goods and services (e.g., participating in a mountain biking trip) may produce financial impacts traceable in the economy, but these impacts likely do not reflect the entire value associated with the good or service.

The Draft RMP/EIS contains a reasoned analysis containing quantitative or detailed qualitative information on how the alternatives would affect market and non-market values. Thus, the Draft RMP/EIS took a 'hard look' at the effects on market and non-market values.

253. Comment Summary: The Draft RMP/Draft EIS inadequately differentiated the fiscal impacts of the dollar value estimates of goods and services by benefit type.

Response: The BLM has updated the presentation of the market and non-market values analysis in Issue 1 of the Socioeconomics section of the Proposed RMP/Final EIS to clarify how the BLM estimated the market and non-market values of ecosystem services, and what the values mean in the context of the alternatives and the Proposed RMP.

The analysis of the value of goods and services is an assessment of the economic value to society of

goods and services derived from BLM-administered lands, and how those values differ under the RMP alternatives. Following BLM guidance (USDI BLM 2013a), the analysis includes both market-based and non-market goods and services. The analysis estimates both market and non-market values using professionally accepted valuation techniques. The resulting market-based and non-market based monetary estimates are comparable in the context of determining society's overall economic well-being. However, market and non-market values result in different degrees of fiscal impact in economies.

Market-based values, by definition, show up as monetary transactions in an economy. Non-market values, in contrast, do not contribute directly to the fiscal status of an economy. However, they do have indirect effects. People routinely make decisions or take actions because of the value they place on non-market goods and services. These actions result in monetary transactions that do affect the economy, though these transactions typically reflect only a small portion of the total economic value of the good or service. In the context of the Proposed RMPs, the most relevant example of this relationship is recreation: people do not typically pay to participate in outdoor recreation, but they do purchase gear, fuel, and lodging as a result of their participation. These purchases, while economically important, are not part of the description of the non-market value of recreation as presented in Socioeconomics Issue 1, but are, to the extent data allow, included in the analysis of economic impacts, described in Socioeconomics Issue 2, economic activity in the planning area.

254. Comment Summary: The Draft RMP/Draft EIS failed to recognize the full value of water quality, especially variation across alternatives.

Response: The BLM based the analysis of economic value presented in Socioeconomics Issue 1 on the underlying physical changes in water quality arising from each alternative, as described in the Hydrology section of Chapter 3. In that section, the analysis did not identify variation across alternatives with respect to impacts to water quality parameters that contribute to people's use or enjoyment of the resource (e.g., drinking, swimming, fishing, supporting biodiversity, and diluting downstream pollution). Thus, the analysis of the value of the good or service associated with water quality also did not show variation across alternatives. The Draft RMP/EIS acknowledged the importance of water quality services provided by BLM-administered lands, but did not estimate specific monetary values because of the uniformity of benefits across alternatives.

255. Comment Summary: The Draft RMP/Draft EIS failed to estimate the socioeconomic value of biodiversity.

Response: The BLM has updated Issue 1 of the Socioeconomics section of the Proposed RMP/Final EIS to include more detail from the economic literature about the importance of biodiversity. The Draft RMP/EIS described in qualitative terms the value of biodiversity associated with BLM-administered lands and the effects of alternatives. Quantifying in monetary units the value of biodiversity of BLM-administered lands would require physical and economic data that is not available, and a level of analytical detail and precision that would be too speculative for a planning-level analysis over a large landscape.

256. Comment Summary: Loss of survey and manage will impact the local economy by removing numerous local survey jobs from the economy. These impacts were not disclosed or analyzed in the DEIS.

Response: The loss of survey jobs from the elimination of the Survey and Manage measures is speculative. The commenter provided no specific information on the present number of local, seasonal survey jobs that the Survey and Manage measures might provide at any point in time during a calendar year, or whether these are volunteer or paid positions with any available wage data or other economic data that could have been included in the Draft RMP/EIS analysis of socioeconomic effects. The BLM would continue to provide management for species listed under the ESA including pre-disturbance surveys and surveys to find new populations for plant species listed under the ESA. Surveys for Bureau Sensitive species would continue to be an available management tool, to be used at the discretion of the BLM. It is speculative to assert that survey jobs would decline under the action alternatives or the Proposed RMP, given the management direction to conduct surveys for listed species and the discretion to use surveys to manage Bureau Sensitive species.

257. Comment Summary: The Draft RMP/Draft EIS failed to estimate the value of views to private property owners.

Response: The BLM has updated Issue 1 of the Socioeconomics section of the Proposed RMP/Final EIS to include a more detailed description of the relationship between property values and scenic amenities on BLM-administered lands. The Proposed RMP/Final EIS also includes acknowledgement of the relevance of scenic amenities for property values as demonstrated by hedonic analyses (analyses of the characteristics or services related to a price of a marketed good). However, quantifying in monetary units the impacts of the alternatives on property values would require physical and economic data that is not available, and a level of analytical detail and precision that would be too speculative for a planning-level analysis over a large landscape.

258. Comment Summary: The EIS should clearly identify the relative social cost of each alternative, specifically with respect to the social cost of carbon.

Response: The BLM has updated Issue 1 of the Socioeconomics section of the Proposed RMP/Final EIS to clarify confusion surrounding the description of the effects of the alternatives on the value of net carbon storage. The BLM has incorporated into the analysis updated data from the Climate Change section and has updated social cost of carbon values from the Interagency Working Group (IWG 2015), but the analytical methodology is fundamentally the same as in the Draft RMP/EIS. Issue 1 quantifies the value of net carbon storage, relying on carbon storage data presented in the Climate Change section that take into account emissions resulting from the alternatives. The value reflects the latest Federal estimates of the social cost of carbon, using the guidance and methods outlined by the Council on Environmental Quality (IWG 2015).

259. Comment Summary: The Draft RMP/Draft EIS underestimated the social cost of carbon.

Response: The BLM has updated the social cost of carbon estimates presented in Issue 1 of the Socioeconomics section of the Proposed RMP/Final EIS. The estimates rely on the U.S. Interagency Working Group on Social Cost of Carbon's (IWG) latest estimates and methodology, from July of 2015 (IWG 2015). The IWG's estimates are the best available estimates of the social cost of carbon at the current time. The IWG identifies limitations to the analysis in the 2010, 2013, and 2015 technical support documents. These identified limitations include some of the same concerns raised through public comments on the Draft RMP/EIS. The IWG acknowledges that these limitations may lead to an underestimation of the actual social cost of carbon (IWG 2010, p. 31). The economists charged with developing the estimates say they plan to continue to refine their estimates and methods as

researchers produce better valuation data on a wider range of global damages from climate change. Specifically, the Office of Management and Budget states, in responding to the many public comments it received on the 2013 Technical Support Document:

> *[T]o ensure that the next SCC update keeps up with the latest available science and economics, we will seek independent expert advice on opportunities to improve the estimates, including many of the approaches suggested by commenters and summarized in the Response to Comments document. Specifically, we are asking the National Academies of Sciences, Engineering, and Medicine to provide advice on the pros and cons of potential approaches to future updates. Input from the Academies, informed by on-going public comment and the peer-reviewed literature, will help to ensure that the SCC estimates used by the Federal government continue to reflect the best available science and economics. Federal agencies will continue to use the current SCC estimates in regulatory impact analysis until further updates can be made to reflect the forthcoming guidance from the Academies.* (Shelanski and Obstfeld 2015)

Thus, the BLM believes using the current (2015) social cost of carbon estimates in the Proposed RMP/Final EIS is justified, because more comprehensive, peer-reviewed estimates are not available. The BLM has reviewed the studies presented by the commenters and the data limitations outlined by the IWG itself. To address the uncertainty that arises from these limitations, the BLM has incorporated discussion in the Proposed RMP/Final EIS to highlight the uncertainty and the implications for management decision-making (see the Socioeconomics section of Chapter 3).

260. Comment Summary: The Draft RMP/Draft EIS failed to account, properly, for all costs of the RMP alternatives, including social, external, and non-market costs.

Response: The Draft RMP/EIS accounted for all costs of the alternatives to the extent practicable. The analysis of the value of goods and services presented in Issue 1 of the Socioeconomics section captured both market and non-market values, including many values typically identified as 'external' to timber harvest calculations. For example, the analysis considered the effects of the alternatives on water quality, net carbon storage, and recreation, among many other goods and services. The values of these goods and services, described both qualitatively and quantitatively, are presented alongside the market values of timber and other traditional extractive uses of BLM-administered lands, so readers may compare how each alternative would affect the entire suite of goods and services. Neither the CEQ regulations for NEPA nor BLM guidance require a benefit-cost analysis of alternatives. Moreover, a benefit-cost analysis would not be appropriate or produce an accurate comparison of benefits and costs (external or otherwise) given the level of detail available for each good and service across the planning area.

261. Comment Summary: The EIS should discuss the impacts of differences in timber revenues on county services and community capacity not just on payments to counties.

Response: The Draft RMP/EIS did discuss the impacts of differences in timber revenues on county services and community capacity. In Issue 3 of the Socioeconomics section, the analysis focuses on the effects of the alternatives on amount of payments to counties from activities on BLM-administered lands. Issue 5 of the Socioeconomics section incorporates output from Issue 3 into its analysis of the impacts of the alternatives on community capacity (USDI BLM 2015, pp. 569–588). The Draft RMP/EIS provided a historical context for the analysis of how alternatives may affect county payments and may affect spending on services. This information includes the relative importance of county payments to total county budgets, the types of county services supported by

county payments, and the challenges counties have faced and currently face with declining county payments from 2003 through 2012 (USDI BLM 2015, pp. 558–559). The Analysis of the Management Situation provided additional information, including county payments as a percentage of county budgets and as a percentage of county general funds discretional revenue (USDI BLM 2013, pp. 96–104). This information also included a description of the Oregon Secretary of State's assessment of financial well-being, which found that all eight of the counties identified as having a higher rate of financial distress receive payments from activities on BLM-administered lands. The BLM incorporated this information into the Draft RMP/EIS by reference (USDI BLM 2015, p. 529).

Counties choose how to spend these payments. Counties also decide whether and how to change spending on county services in response to changes in payments from activities on BLM-administered lands. It is outside the purpose or scope of the analysis to speculate how counties might choose to change future spending on county services in response to future changes in payments from activities on BLM-administered lands.

262. Comment Summary: The Draft RMP/EIS used an inappropriate baseline year for analyzing payments to counties. The Draft RMP/EIS failed to adequately describe the historical conditions regarding county payments as a basis for understanding and providing context for the effects of the proposed alternatives on these payments.

Response: The BLM based its analysis of county payments on the results of the vegetation modeling, which included projected timber harvest. The Draft RMP/EIS explained that the analysis used 2012 as baseline, because 2012 was the most recent year for which all economic data were available (USDI BLM 2015, pp. 527–528, 545, 557). Using the most recent data available assures that the economic analysis reflects current conditions and provides readers with a common reference point and context for the impacts described in the analysis. The BLM disagrees that its use of 2012 as baseline year is inappropriate.

The Draft RMP/EIS included information on payments to counties for years 2003, 2007, 2010, and 2012, allowing readers to compare payments in different time periods (USDI BLM 2015, p. 560). The Analysis of the Management Situation discussed how county payments would have been significantly less in 2007 had they been based on the payment formula in the O&C Act, rather than on the payments through the Secure Rural Schools and Community Self-Determination Act (SRS) (USDI BLM 2013, p. 103). The BLM provides additional information on payments to counties from activities on BLM-administered lands for earlier years on BLM's website, http://www.blm.gov/or/rac/ctypaypayments.php.

263. Comment Summary: The EIS should be revised to remove bias in its presentation of payment mechanisms to counties. The Draft RMP/EIS appears to favor payments under the SRS program rather than payments calculated using the O&C Act formula.

Response: The BLM disagrees that its presentation of payment mechanisms is biased. The Draft RMP/EIS identified the uncertain future of SRS payments (USDI BLM 2015, p. 556). In light of this uncertainty of continued payments under the SRS formula, the Draft RMP/EIS analyzed the effects of the alternatives on county payments using the O&C Act formula. For comparison, the Draft RMP/EIS showed county payments in 2012 under both the SRS and the O&C Act formula (USDI BLM 2015, p. 561). Regardless, the BLM has no discretion over whether counties receive SRS payments or payments using the O&C Act formula.

264. Comment Summary: The EIS should acknowledge sources of funding (other than from County payments) are or could be available to offset county budget shortfalls.

Response: The analysis of county payments evaluates how alternatives would affect payments to counties from activities on BLM-administered lands. Counties decide how to change spending in response to changes in payments from activities on BLM-administered lands. County residents, through their elected officials and through votes on taxes or fees, choose how they collect revenues to fund county services. How counties could obtain sources of funding other than payments derived from activities on BLM-administered lands is beyond the scope of an RMP.

265. Comment Summary: The EIS fails to take into account the potential responses of other non-BLM timberland owners in analyzing market conditions. It also does not include an assessment of the rate of harvest on adjacent state and private forestlands and the implications this has for the relative value of goods and services from BLM lands.

Response: The Draft RMP/EIS did include assessments of both potential responses of non-BLM timberland owners in assessing market conditions and those owners' influences on markets in deriving values of goods and services on BLM-administered lands. Issue 1 of the Socioeconomics section in Chapter 3 discussed both these under the "Market Impacts of Changes in BLM Harvests" section. The analysis addressed the market (both price and harvest quantities) impacts of changes in BLM timber harvests under each alternative, specifically and quantitatively assessing the estimated change in private harvest under each alternative (USDI BLM 2015, pp. 515–516). The analysis incorporated these estimated responses to market conditions into the analysis of the values of BLM goods and services. The "Market Impacts of Changes in BLM Harvests" section, in part, served to help distinguish between gross harvest effects (the BLM Harvest Volumes in **Table 3-165)** and the net harvest effects, which was incorporated into the jobs and earnings analysis in Issue 2 of the Socioeconomics analysis. Thus, the BLM believes that the Draft RMP/EIS did take into account the potential responses of other non-BLM timberland owners in analyzing market conditions.

266. Comment Summary: The EIS should include a detailed assessment of externalities, subsidies, missing markets and other timber market failures in the planning area that distort normal market conditions. The Draft RMP/EIS was silent on the entire concept of normal markets, market failures, and how the proposed increase in logging was justified in the presence of them.

Response: The BLM used recent as well as historical market trends and levels of activity by timber suppliers and buyers to develop the stumpage price projections used in the vegetation modeling in the Draft RMP/EIS. The Draft RMP/ EIS presented the historical stumpage prices in western Oregon for BLM, U.S. Forest Service, and state and private timber sales (USDI BLM 2015, p. 484–486). For BLM timber sales, stumpage is appraised and sold (by auction) in competitive markets at the fair market value. For projecting stumpage prices into the future, the BLM generalized trends from the volatile nature of the market, as explained the Draft RMP/EIS (USDI BLM 2015, pp. 480–481).

Timber markets, like other commodity markets, are organic frameworks that operate with little structure other than to establish terms of trade. They seek to cover production costs of suppliers and to reduce factor costs of production. In the case of both public and private forest management, production costs include stand establishment costs, management costs, administrative costs, and harvesting costs. Externalities are often mitigated through regulation of forestry practices, such as stream buffers or limits on harvesting practices. There is little evidence of subsidies in western

Oregon timber markets, though Federal agencies may sell some timber at less than the production costs, typically as part of restoration strategies to reduce fire risks or to restore habitat. In such cases, the timber harvest represents a by-product of other achieving other management purposes.

Timber markets in western Oregon are both highly competitive and volatile, as underlying market determinants shift. Because the BLM sells timber by auction in competitive markets, which represents the highest standard for establishing prices, market failures in the western Oregon timber markets do not constitute a substantial issue that would alter the analysis of effects of the alternatives on timber supply and demand as analyzed in the Draft RMP/EIS. The BLM does not agree that a detailed assessment of "externalities, subsidies, missing markets and other timber market failures" is necessary to analyze the effects of the alternatives on timber supply and demand.

The commenter mischaracterizes the alternatives as constituting a "proposed increase in logging." As clearly described in the Draft RMP/EIS, only three of the four action alternatives would provide more sustained-yield timber harvest than the volume declared in the 1995 RMPs, and only one of the four action alternatives would provide more sustained-yield timber production than the No Action alternative (USDI BLM 2015, pp. 262–263). Thus, the alternatives in the Draft RMP/EIS present an array of timber harvest levels that range above and below current levels and cannot be characterized as a proposed increase in logging. Regardless, the analysis does not purport to justify any particular timber harvest level, but to analyze the effects of the alternatives of resources, including timber supply and demand.

267. Comment Summary: The EIS should explain the need for logs sourced from public lands, when hundreds of millions of board feet are harvested in Oregon and exported to our commercial competitors every year.

Response: The O&C Act requires that the O&C lands be managed "for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities" (43 U.S.C. 1181a). In Chapter 1 of the Draft RMP/EIS, the BLM stated, "Based on the language of the O&C Act, the O&C Act's legislative history, and case law, it is clear that sustained-yield timber production is the primary or dominant use of the O&C lands in western Oregon" (USDI BLM 2015, p. 15). The BLM based the purpose and need for this RMP revision on the laws that apply to the BLM, and one of the purposes for the RMP revision is to provide for a sustained yield of timber. Thus, the BLM has established that the BLM-administered lands in the planning area must provide for a sustained yield of timber, consistent with applicable statutes, regulations, and policies (USDI BLM 2015, pp. 5–10).

The Draft RMP/EIS explained that public lands have been a major supplier of timber to mills in western Oregon for decades (USDI BLM 2015, pp. 484–486). Once timber is harvested, it flows across the region to various processing centers. There are few restrictions on how Federal timber flows across western United States, with the exception of the ban on the export of timber from Federal lands and substituting timber from Federal lands for exported private timber. The amount of timber harvest on other lands and the movement of harvested timber do not alter the applicable statutes, regulations, and policies that direct that the BLM-administered lands in the planning area provide a sustained yield of timber.

268. Comment Summary: The EIS should include a market analysis that is driven by optimization of revenue from timber harvests on a per mmbf basis. The BLM might be able to avoid the market response that the Draft RMP/EIS says will occur (i.e., reductions in private harvests and at the same time increase revenues for Counties without increasing acres treated).

Response: One of the purposes for the RMP revision is to provide for a sustained yield of timber. The alternatives in the Draft RMP/EIS would result in an array of timber harvest levels and a consequent array of revenue from timber harvest and payments to counties (USDI BLM 2015, pp. 509–516, 562–565). However, optimizing revenue from timber harvests or maximizing payments to counties were not purposes for the RMP revision. As a result, the BLM did not develop an alternative specifically designed to optimize revenue from timber harvests or maximize payments to counties. As explained in the comment response above in the Range of Alternatives section, the Draft RMP/EIS assessed a reference analysis of "Manage most commercial lands for maximizing timber production," which would produce substantially more timber harvest (and consequently higher payments to counties) than the alternatives. However, the reference analysis of "Manage most commercial lands for maximizing timber production" would not be a reasonable alternative.

Additionally, the BLM did not develop the analysis of socioeconomic effects to derive a specific conclusion. According to CEQ regulations, the analysis in an EIS must provide a full and fair discussion of significant environmental issues and shall serve as a means of assessing environmental effects rather than justifying decisions already made (40 CFR 1502.1, 40 CFR 1502.2(g)). To design the analysis to reach the particular outcome of "optimization of revenue from timber harvest on a per mmbf basis" would not be consistent with the requirements for NEPA analysis.

269. Comment Summary: The EIS should provide a better explanation of recreation participation forecasts. The EIS should be revised to better explain the basis for the recreation demand forecasts. The Draft EIS was flawed in that it implied a similar value for recreation across alternatives.

Response: The BLM has revised the recreation participation forecasts to reflect different levels of recreation participation and value by alternative and the Proposed RMP in the Proposed RMP/Final EIS (see the Socioeconomics section of Chapter 3).

The recreation participation forecasts in the Proposed RMP/Final EIS are based on trends developed by the U.S Forest Service specific to each of 17 categories of outdoor recreation, and include not only trends in preferences, but also factor in the effects of population growth, income growth, land use change and climate change. The U.S. Forest Service developed the trends for ten-year increments through the year 2060 (Bowker *et. al.* 2012). The BLM aligned these activity-specific forecasts and participation trajectories with the outdoor recreation categories monitored and reported within the BLM Recreation Management Information System (RMIS) database. The BLM applied the trends to the baseline (2012) participation levels by activity type. The recreation demand forecasts in the Proposed RMP/Final EIS include all measured recreation on BLM-administered lands, not just those proximate to population centers. The BLM included only those recreation activities that are measured and included in the RMIS in the basis for future extrapolations.

In addition to forecasts for overall future participation levels, the Proposed RMP/Final EIS includes estimates of changes in outdoor recreation participation (visitor day and visit forecasts) by alternative and the Proposed RMP. The BLM based these estimates on different levels of outdoor recreation opportunities that would result from differences in Recreation Management Area total acreage by alternative and elasticity of demand estimates derived from data collected by the U.S. Census Bureau

as part of the American Time Use Survey. **Appendix P** – Socioeconomics provides detail on the methods for estimating and applying these demand elasticities.

270. Comment Summary: The EIS fails to describe how the increased timber harvesting will take away the forest resources needed for job growth in the economic sectors such as tourism with long term growth potential.

Response: The BLM does not agree with the commenter's assertion that timber harvesting necessarily would "take away the forest resources needed for job growth" in other sectors, such as recreation and tourism. As demonstrated by the analysis in the Draft RMP/EIS, the amount and type of recreation opportunities on BLM-administered lands would not be constrained by the level of timber harvest, but rather by prioritization of recreation activities and locations, considering the overall set of options available to participants in western Oregon. Notably, the amount of recreation opportunities and the jobs and revenue associated with recreation shows no clear or direct relationship with the amount of timber harvest under the alternatives (USDI BLM 2015, pp. 454–470, 516–520). It is possible that timber harvest activities under the alternatives or Proposed RMP would inhibit certain types of outdoor recreation in certain specific locations, such as dispersed backcountry activities that prioritize wilderness conditions (USDI BLM 2015, pp. 467–468). However, the alternatives and the Proposed RMP provide for different recreational values on different portions of the landscape, including backcountry and wilderness conditions, but cannot provide for all values on every acre. As explained in the Recreation section of Chapter 3, where the BLM would manage recreation management areas within the Harvest Land Base, the BLM has determined that recreation management can be compatible with sustained-yield timber production. Therefore, allocation of the Harvest Land Base would not degrade BLM's objectives for providing outdoor recreation opportunities and associated economic development conditions.

271. Comment Summary: The BLM should revise the EIS to identify underestimated or omitted jobs attributable to recreation and tourism activities, including hunting, fishing, and wildlife viewing.

Response: The BLM has revised the recreation participation forecasts in the Proposed RMP/Final EIS to reflect different levels of recreation participation and value by alternative and the Proposed RMP. These varying levels of recreation participation and value would result in varying levels of jobs and income attributable to recreation and tourism by alternative and the Proposed RMP in the Proposed RMP/Final EIS (see the Socioeconomics section of Chapter 3).

Tourism in western Oregon is an important and complex component of local and regional economies. In the Proposed RMP/Final EIS analysis, the BLM estimates recreation and tourism-based jobs and income where there are transactions in the economy expected as a result of BLM resource management activities and where data are available to make the estimates. The visitor use estimates in the analysis include all recreation activities, including fishing, hunting, and wildlife viewing, and both local and non-local visitors (tourists). The Proposed RMP/Final EIS describes the valuation methodologies for recreation and visitation (see the Socioeconomics section of Chapter 3).

272. Comment Summary: The BLM should revise the EIS to identify jobs attributable to all amenities, both market and non-market that were omitted from the Draft RMP/Draft EIS.

Response: The BLM believes that the analysis has identified the reasonably foreseeable effects of the alternatives on jobs. As noted in the comment response above, the BLM has revised the Proposed

RMP/Final EIS to reflect different levels of recreation participation and recreation-related jobs by alternative and the Proposed RMP. It is not the intent of this analysis to catalog all the ways in which BLM-administered lands contribute to life in western Oregon, however attenuated or speculative the connection with the alternatives. The BLM is required under the NEPA to provide analysis of significant issues (40 CFR 1501.7(a)(2), 40 CFR 1501.7(a)(3), 40 CFR 1502.1). The BLM also analyzes issues where their assessment is necessary to make a reasoned choice between alternatives considered (USDI BLM 2008, pp. 40–41).

Western Oregon is known for amenities that extend and interconnect across all types of public and private lands. Amenities include cultural, institutional, and natural features that interact to provide an array of benefits for business and residents alike. Economic development in western Oregon often draws upon such attributes to attract new businesses or cultivate new ones, resulting in jobs and income for residents and newcomers. The BLM-administered lands contribute to this vast array of amenities in western Oregon through natural features such as forests, meadows, wildlife habitat, streams, topography, and juxtaposition with private lands. The BLM does not dispute that cultural, institutional, or natural amenities could be associated with BLM-administered lands in the planning area. However, there is insufficient information on such amenities to—

- Identify the production of goods and services associated with these amenities;
- Forecast any changes in these amenities; and
- Link any changes in these amenities to the alternatives or the Proposed RMP.

Without such information, it is not possible to analyze any change in jobs associated with these amenities as a reasonably foreseeable effect of the alternatives or the Proposed RMP, beyond the effects on jobs analyzed in the Socioeconomics section of Chapter 3.

273. Comment Summary: The BLM should revise the EIS to correct the number of jobs attributable to timber harvest and processing. These were overstated in the Draft RMP/Draft EIS.

Response: The BLM disagrees that forest product industry jobs were overstated in the Draft RMP/EIS. Summaries of firm-level (individual business) data from Oregon Forest Resources Institute and from the University of Montana, Bureau of Business and Economic Research provided employment and income relationships to timber harvest by product type that are unique to Oregon. The BLM used the relationship data in conjunction with timber growth and harvest models to create and run seven customized IMPLAN® models of western Oregon (MIG, Inc. 2014) (see Issue 2 of the Socioeconomics section of Chapter 3). In addition, the BLM incorporated the effect of BLM harvest on other timberland ownerships to account for total market effects on jobs and income. The BLM believes that this analysis provides a reasoned analysis of jobs attributable to timber harvest and processing based on high quality, detailed, and quantitative information.

274. Comment Summary: The BLM should revise the EIS using an earlier base year, not 2012, as a reference point for comparing jobs by alternative.

Response: The BLM disagrees that the use of 2012 as baseline year is inappropriate. As explained in the comment response above, the BLM used 2012 as the base year for comparing jobs by employment because it was the most recent year for which all economic data were available (USDI BLM 2015, pp. 527–528, 545, 557). Using the most recent data available assures that the economic analysis reflects current conditions and provides readers with a common reference point and context for the impacts described in the analysis. In addition, using the most recent year as a benchmark assures that production, employment, and payrolls for all industries in the area reflect current business conditions. Production processes and relationships, whether in retail, service, or manufacturing

industries, change over time. Using old benchmarks could easily compromise the analyses, and mislead or cloud analysis results. Economic effects that are triggered by changes in BLM management start with and move forward from current economic and business conditions as described in the Affected Environment sections of the Socioeconomics section in Chapter 3.

Additionally, the BLM has provided earlier base year information for employment within the planning area in the Analysis of the Management Situation (USDI BLM 2013, p. 105), and the BLM incorporated this information into the Draft RMP/EIS by reference (USDI BLM 2015, p. 529).

275. Comment Summary: The BLM should revise the EIS to use best available data in conducting jobs analysis, including publications by the Oregon Forest Resources Institute.

Response: The BLM used detailed data from multiple sources in the various employment analyses presented in the Draft RMP/EIS, including data from the Oregon Forest Resources Institute and from the University of Montana, Bureau of Business and Economic Research. The analysis cites the data sources (including the Oregon Forest Resources Institute's "2012 Forest Report: An economic assessment of Oregon's forest and wood products manufacturing sector") throughout the analysis of the effects of the alternatives and the Proposed RMP on jobs (see the Socioeconomics section of the Chapter 3).

276. Comment Summary: The BLM should revise the EIS to fully consider industry trends when analyzing and presenting timber industry jobs by alternative.

Response: The BLM fully considered historical and trend data as an aggregated description of the Affected Environment for the analysis of the alternatives on jobs. The BLM considered and has presented historical and trend data for employment, unemployment, and earnings in the planning area briefly in the Affected Environment portions of the Socioeconomics section in the Draft RMP/EIS (USDI BLM 2015, pp. 484–508, 529–545, 559–561, 576–584), and more fully in the Analysis of the Management Situation (USDI BLM 2013, pp. 98–108, 121–127).

277. Comment Summary: The BLM should revise the EIS to recognize differing log sizes and their distribution across BLM districts as well as variations in manufacturing/processing capacity when estimating economic effects to the timber industry.

Response: The Draft RMP/EIS included analysis of differing log sizes that would be harvested under each alternative (USDI BLM 2015, pp. 274–275). The jobs and income analysis for Issue 2 in the Socioeconomics section recognized three distinct grades of log products harvested from BLM-administered lands: veneer logs, sawlogs, and roundwood/pulpwood. As explained in the Draft RMP/EIS, the analysis considered each product using unique job and income relationships per unit volume harvested and processed (USDI BLM 2015, p, 548).

The analysis used data on current log flows between district model areas, so that logs harvested from each district were distributed to processing centers according to current product transportation patterns. Based on these data, some logs harvested on BLM-administered lands are transported outside of western Oregon for processing. This is especially true for harvest from the Klamath Falls model area, where data show that 11 percent of logs are processed in California.

For this analysis, the BLM customized the economic models for the jobs and income analysis to represent current industry production (2012), but did not constrain the models to the current processing capacity. As such, the models allow production expansion as part of the analysis, if needed, to process harvest increases.

Therefore, the BLM believes that the socioeconomic analysis in the Draft RMP/EIS did recognize differing log sizes and their distribution across BLM districts as well as variations in manufacturing/processing capacity.

278. Comment Summary: The BLM should revise the EIS to correct or clarify the application of the stability/volatility analysis to avoid erroneous conclusions. The BLM should revise the EIS to re-analyze stability/volatility at a regional or local geographic scale instead of a national scale.

Response: The BLM disagrees that it has incorrectly applied analysis of stability and volatility in analysis in the Draft RMP/EIS. The volatility analysis presented in the Draft RMP/EIS is one way to examine the historical pattern of economic growth rates and how BLM management might affect jobs and income in western Oregon.

The timber industry has a long history in western Oregon, but it is not a stagnant one. Like most industries, timber-based firms have responded to changing product demands, fluctuating input availability, and U.S. business cycles by upgrading production processes to capabilities not seen or technologically available in decades past. The volatility analysis of growth rates does suggest that industries tied to commodity markets—like wood products —can be vulnerable to highs and lows not experienced by some industries. Steady timber harvests may eliminate one factor of industry volatility, but it cannot fully offset the volatility of commodity markets that are central to these timber-based firms.

The jobs and income analysis in the Draft RMP/EIS showed how changes in timber harvest are likely to translate into an increase (growth) or decrease (contraction) of the timber industry and the local economy in the first decade of implementation of the alternatives, while the volatility analysis shows how steady such growth could be over many decades given historic patterns. As explained in the Draft RMP/EIS, the timber industry contributes high, year-round salaries to western Oregon, especially southwestern Oregon, that seasonal recreation-based industries do not, but it also brings a level of volatility that recreation-based industries do not (USDI BLM 2015, pp. 529–555).

The BLM analyzed volatility at a local, district model area scale for portions of the analysis. This analysis encompassed all industries in each local area, and provided a local reference point for the historic national characteristics of both the timber-related and recreation-related industries. However, these data are limited in accounting for influences to the industry that national level data can present. The BLM conducted volatility analysis of growth rates for both timber-related and recreation-related sectors at the national level primarily to disclose the inherent characteristics of these industries and the markets they serve. A common data set at the national level made possible the long-term analysis, which better reveals growth patterns characterizing each industry. A national scale is especially necessary for timber-related sectors, as industries and harvests in western Oregon are strongly influenced by Federal timber management programs that are often driven by Federal Government interests rather than by markets. For this reason, national patterns are likely to represent a lower bound of growth-rate volatility for timber sectors in western Oregon.

279. Comment Summary: The BLM should revise the EIS to use cost relationships that vary by program size when estimating agency costs to implement the timber program under each alternative.

Response: The Proposed RMP/Final EIS has revised the cost estimates by using a variety of timber program costs per Mbf that better reflect the variation in harvest volume yield per acre and relative timber program costs by district and alternative and the Proposed RMP (see Issue 7 in the Socioeconomics section of Chapter 3, which reflects this updated information).

280. Comment Summary: The EIS should be revised to adequately describe and capture the relationship between the BLM's management and social conditions in the Counties including public safety, schools, and discretionary spending. The EIS's capacity and resiliency analysis is flawed because it did not address some of issues which are paramount to social well-being: i) impacts to school enrollment, which ultimately affects future workforce availability, school funding, and ability to offer services; ii) labor force size trends; and iii) employment participation numbers relative to unemployment, which is reflected in the related social consequences of unemployment such as domestic violence, and drug and alcohol addiction.

Response: The Draft RMP/EIS analyzed the relationship between BLM's management and social conditions in the counties in several different ways throughout the Socioeconomics section. The analysis of socioeconomic resources has two broad emphases: economic growth and stability; and social capacity and resiliency (USDI BLM 2015, pp. 473, 570). Issues 3 and 5 addressed public safety, schools, and discretionary spending most directly. Issue 3 noted that counties use payments in various ways including for public safety, county roads, and education. Issue 3 also described the declines in payments to counties since 2003, the financial hardships and challenges that some of the counties face, and the different efforts by counties to deal with declines in payments (USDI BLM 2015, pp. 558–565).

While the capacity and resiliency analysis did not address every factor contributing to social well-being, it included a broad representation of factors. The Affected Environment for Issue 5 provides data on 13 metrics including education, unemployment, and health insurance (see **Table 3-2**, Capacity and Resiliency Metrics, in the Draft RMP/EIS). Further, these issues featured frequently in interviews with community representatives (see the interview summaries in **Appendix P** – Socioeconomics).

For the analysis in Issue 5, the BLM worked closely with the Cooperating Agencies Advisory Group's Socioeconomics Working Group, as documented in the Planning Criteria (USDI BLM 2014) (see the Formal Cooperators section of Chapter 4). Members of that group urged the BLM to explore the relationship between the BLM's management and specific social conditions such as public safety, child, family, and community health, school budgets and programs, unemployment, and drug and alcohol abuse. The BLM reviewed data on these conditions provided by group members and explored the potential, for example, to analyze quantitatively the relationship between an increase or decrease in a timber harvest and a change in a social condition, such as a sheriff's office staffing levels. This proved to be not meaningfully possible because of the myriad of other factors that influence social conditions and the practical inability to isolate timber harvest volume as a factor affecting such social conditions.

Instead, the BLM opted to explore the relationship qualitatively through interviews with city and Tribal representatives capturing personal experiences, perspectives, perceptions, and insights, to help tell each community's "story" in relation to the RMP revision. The Issue 5 of the Socioeconomics section of Chapter 3 includes a brief summary of the interviews. **Appendix P** – Socioeconomics

provides detailed summaries of each interview. The BLM incorporated the conclusions from the interviews into a quantitative analysis to describe how the alternatives and the Proposed RMP would affect communities.

Through the rounded, comprehensive analyses described above, the BLM believes it has adequately described the reasonably foreseeable effects of the alternatives and the Proposed RMP on social conditions in the counties.

281. Comment Summary: The EIS's capacity and resiliency analysis is flawed because it focused on cities and ignored the population living in unincorporated areas; these residents have been most impacted by changes in federal land management. The selection of cities for inclusion in the analysis seems to have been biased towards a desired result. The BLM chose 13 metrics of community capacity and resiliency, but they were chosen among a larger set of metrics. The subset of metrics chosen failed to accurately reflect the community benefits of forest conservation, leading to the conclusion that more logging will provide greater benefits

Response: Much of the socioeconomic analysis in the Draft RMP/EIS presented effects at the county level and, as such, included the effects of the alternatives and the Proposed RMP on the populations of both incorporated and unincorporated areas. Therefore, the Draft RMP/EIS did not ignore either population.

The Draft RMP/EIS noted that there are practical difficulties in comprehensively identifying some types of communities and in analyzing how the alternatives would affect them. With respect to the population living in unincorporated areas, this is largely due to the geographically dispersed nature of the residents that make up this population. The Draft RMP/EIS also explained that because much of the socioeconomic analysis is at the county level, the BLM opted to gain a different perspective on the potential impacts of the alternatives and the Proposed RMP by analyzing communities at the sub-county level (i.e., cities). The Draft RMP/EIS noted that incorporated cities comprise approximately 70 percent of the population of the planning area, justifying special consideration in the socioeconomic analysis (USDI BLM 2015, pp. 569–576). Due to this high percentage of population in incorporated cities, the large number of cities, and their wide geographic distribution, and without evidence to the contrary, the BLM does not agree that the alternatives or the Proposed RMP would have greater effects on community capacity and resiliency for the population in living in unincorporated areas than the population in incorporated cities.

The Draft RMP/EIS disclosed that analyzing all 134 (small and mid-size) cities, including conducting personal interviews, would have been impractical, and that the BLM decided that a 10 percent sample plus the Tribes would be sufficiently representative of the entire group. The BLM stratified (weighted) the sample of cities, so that it would be representative of the diverse geography of the planning area, and, within the stratification rules, selected 13 cities at random from the group of 134 cities. The Draft RMP/EIS clearly described the methodology for stratifying and selecting the cities for inclusion, and the random selection ensured that the BLM did not bias the selection towards any particular outcome. The BLM developed this methodology in consultation with the Cooperating Agencies Advisory Group's Socioeconomics Working Group (see the Formal Cooperators section of Chapter 4).

The Draft RMP/EIS explained the selection of the capacity and resiliency metrics. The BLM selected these metrics to create a data baseline for assessing potential impacts from the alternatives and Proposed RMP, not with the intent of reflecting or favoring one type of benefit over another. The BLM selected the metrics in consultation with the RMP's for Western Oregon Cooperating Agencies

Advisory Group's Socioeconomics Working Group. The group considered a larger set of potential metrics, but, as described in the methods section, selected the final list based on each metric's relevance to the capacity/resiliency question, availability of data across the communities, and analytic efficiency (USDI BLM 2015, p. 574). None of the selected metrics are directly related to timber harvest or logging, but are generally reflective of broad social or economic conditions, such as unemployment rate and median household income. Only one metric is directly related to a resource managed by the BLM: acres of outdoor recreation land (USDI BLM 2015, p. 578). Therefore, the BLM does not believe that the selection of the metrics failed to reflect benefits of forest conservation or was biased towards timber harvest.

282. Comment Summary: The EIS should be revised to address the issue of the increased cost to county governments to provide services such as roads, sheriff patrols, and search and rescue as a result of increasing levels of activities on BLM lands.

Response: The BLM has revised Proposed RMP/Final EIS to include a description of payments for services from BLM districts to local jurisdictions and other organizations (see Issue 3 in the Socioeconomics section of Chapter 3). The Cooperating Agencies Advisory Group's Socioeconomics Working Group discussed this issue, and the City of Sublimity representative described the issue in his interview for Issue 5 (see the interview summaries in **Appendix P** – Socioeconomics).

The BLM districts contract with local jurisdictions (counties and cities) to provide services such noxious weed control, refuse removal, road maintenance and decommissioning, campground maintenance, habitat restoration, trail maintenance, law enforcement patrol, and emergency services. Payments for such services are highly variable from year to year depending on funding or special project needs. It is possible that unreimbursed county government expenses occur in specific locations under specific circumstances, but comprehensive data of the cost to county governments of providing services on BLM-administered lands is lacking. Therefore, it is not possible to project such expenses into the future or to analyze future change in such expenses as an effect of the alternatives or the Proposed RMP.

283. Comment Summary: The EIS should revise its conclusion (p. 472 of the DEIS) that alternatives with more logging (i.e., Alternatives B and C) will provide greater benefits in terms of community capacity and resiliency in light of the EISs other conclusions that the timber industry is inherently volatile, that increased timber harvest may have an adverse effect on community stability, and that the social cost of carbon is high.

Response: The conclusion that Alternatives B and C would make the strongest overall contributions to community capacity and resiliency is supported by the analysis of the capacity and resiliency metrics in the Draft RMP/EIS (USDI BLM 2015, pp. 472, 584–588). The Draft RMP/EIS discloses the volatility of the timber industry and analyzes in detail the social cost of carbon of the alternatives. While the analysis of timber industry volatility and the social cost of carbon provided information relevant to the discussion of the social and economic effects of the alternatives, it did not alter the analysis of the community capacity and resiliency metrics. The Interview Summary and Conclusions section of Issue 5 (Capacity and Resiliency) noted that, "With respect to the BLM's impacts, the way the BLM manages timber is by far the number one issue of concern among the communities. The primary concern is economic" (USDI BLM 2015, p. 582). Therefore, the BLM has not revised its conclusion that Alternatives B and C would make the strongest overall contributions to community capacity and resiliency, as demonstrated by the analysis of the capacity and resiliency metrics.

284. Comment Summary: The EIS should address whether the Proposed RMP will change the State of Oregon's distressed status of any of the counties and its communities to a non-distressed status or will the status remain the same or get worse.

Response: The Draft RMP/EIS discussed distressed areas, which the State defines based on indicators that take into account unemployment rates, per capita personal income, change in average covered payroll per worker over 3 years, and change in the county's weighted average employment change over 2 years (USDI BLM 2015, pp. 477–478). However, this analysis cannot project how the alternatives or the Proposed RMP would change which areas the State identifies as distressed, because the BLM cannot project precisely and accurately how the alternatives or the Proposed RMP would alter the specific indicators that the State uses to define distressed areas. Nevertheless, the Proposed RMP/Final EIS notes in Issues 2, 5, and 6 of the Socioeconomics section of Chapter 3 where different alternatives or the Proposed RMP could adversely affect different geographic areas with respect to employment and earnings and capacity and resiliency. The Proposed RMP/Final EIS also notes which of these geographic areas are in distressed areas.

285. Comment Summary: The EIS's analysis of environmental justice should include the full geographic scope of the impacts of climate change, many of which will occur elsewhere in the U.S. and the world, and the fact that the cost of climate change will fall disproportionately on the poor and disadvantaged communities.

Response: The BLM NEPA Handbook explains that the geographic scope of the effects analysis does not extend beyond the scope of the direct and indirect effects of the action (BUSDI BLM 2008, pp. 58–59). The BLM appropriately limited the geographic scope of the environmental justice analysis to the counties within the planning area, because these areas reflect the scope of the direct and indirect social and economic effects of the alternatives (USDI BLM 2015, pp. 589–591). Climate change, in and of itself, is not an effect of the BLM action. The Draft RMP/EIS analyzed the effects of the alternatives on carbon storage and greenhouse gas emissions, and described how climate change would interact with BLM management actions to alter the potential outcomes for key natural resources. As detailed in that analysis, all alternatives would result in a net increase in carbon storage over time (USDI BLM 2015, pp. 132–164). Nevertheless, the BLM cannot equate any specific greenhouse gas emissions or any specific change in net carbon storage with specific climate change effects. Therefore, the BLM does not consider the "the full geographic scope of the impacts of climate change" as an effect of the BLM action, and the effects of climate change on poor and disadvantaged communities outside of the planning area is beyond the scope of this analysis.

286. Comment Summary: The EIS should acknowledge that the shift in harvest volume from the BLM's Coos Bay, Roseburg, and Medford Districts to the northern districts will have negative impacts on the Coquille Indian Tribe's ability to harvest and market timber from the Coquille Forest and result in decreased timber revenue to the Tribe.

Response: The Proposed RMP/Final EIS acknowledges that there would be a shift in harvest volume generally from southern to northern BLM districts under the Proposed RMP. However, it is not reasonably foreseeable that this shift in BLM management of timber would affect the Coquille Tribe's ability to harvest and market timber from the Coquille Forest.

As explained in the Tribal Interests section of Chapter 3, the Coquille Tribe manages the Coquille Forest "subject to the standards and guidelines of Federal forest plans on adjacent or nearby Federal

lands, now and in the future" per Title V of the Oregon Resource Conservation Act of 1996 (Pub. L. 104-208). This means that the adopted BLM RMP that applies to the Coos Bay District will also apply to the Coquille Forest in that it will establish the suite of possible management approaches available for the Coquille Forest. However, the BLM RMP will not determine which specific land use allocations apply to which specific portions of the Coquille Forest or the rate or extent of timber harvest on the Coquille Forest. Absent such information, the BLM cannot ascribe any particular effect of the BLM RMP on the Coquille Tribe as a result of the BLM RMP establishing potential management approaches available for the Coquille Forest.

287. Comment Summary: The RMPs have no provisions for and the EIS does not discuss how the BLM intends to go about offsetting both the federal financial costs and negative externalities of an increased timber sale program.

Response: The Draft RMP/EIS presented a detailed analysis of the "federal financial costs" and the "negative externalities" associated with timber harvest.

The commenter mischaracterizes the alternatives as constituting "an increased timber sale program." As clearly described in the Draft RMP/EIS, only three of the four action alternatives would provide more sustained-yield timber harvest than the volume declared in the 1995 RMPs, and only one of the four action alternatives would provide more sustained-yield timber production than the No Action alternative (USDI BLM 2015, pp. 262–263). Thus, the alternatives in the Draft RMP/EIS present an array of timber harvest levels that range above and below current levels and cannot be characterized as an increased timber sale program.

The Draft RMP/EIS provided a detailed and quantified analysis of the costs of the alternatives, specifically breaking out the costs of the timber sale program (USDI BLM 2015, pp. 599–602). For the Proposed RMP/Final EIS, the BLM has revised its cost estimates by using a variety of timber program costs per Mbf that better reflect the variation in harvest volume yield per acre and relative timber program costs by district and alternative (see the Socioeconomics section of Chapter 3). Nevertheless, as stated in the Draft RMP/EIS, "the BLM's selection of an alternative does not authorize funding to any specific project or activity nor does it directly tie into the agency's budget as appropriated annually through the Federal budget process" (USDI BLM 2015, p. 600). Identifying funding levels or funding mechanisms for the timber program or any other resource program is beyond the scope of an RMP. Thus, the Proposed RMP/Final EIS appropriately does not attempt to address whether or how the BLM "intends to go about offsetting … the federal financial costs … of an increased timber sale program" for the alternatives or the Proposed RMP.

The commenter does not specify which "negative externalities" they believe result from timber harvest. Nevertheless, the Draft RMP/EIS analyzed in detail all significant effects that would be caused directly or indirectly by timber harvest under the alternatives (USDI BLM 2015, pp. 105–862). The specific analyses are too numerous to itemize here, but include analyzing the effects of timber harvest on habitat for plants, fish, and wildlife, water quality, soil productivity, particulate emissions, greenhouse gas emissions, recreation opportunities, visual quality, jobs, earnings, and payments to counties. These analyses describe in detail the externalities, both positive and negative, associated with the array of timber harvest levels that would result under the alternatives. Where significant adverse effects would occur from timber harvest or other resource management, the alternatives in the Draft RMP/EIS vary in their design and consequently vary in the adverse effects that would occur. Where adverse effects would occur from timber harvest or other resource management under all alternatives, the Draft RMP/EIS considered how to mitigate such adverse effects. The Records of Decision for the RMP revision will address mitigation measures that the BLM

will adopt and mitigation measures that the BLM will not adopt. The BLM will address the extent to which it will be "offsetting" negative externalities of timber harvest in the Records of Decision, which will explain how the BLM balances the beneficial and adverse effects of timber harvest against other resource objectives in selecting an RMP.

288. Comment Summary: The EIS should expand the economic measures of success to include other values such as those achieved by the requirements of the Clean Water and Air Acts, enhancement of fisheries, recreation, and other forest resources.

Response: The Proposed RMP/Final EIS includes a Monitoring Plan with three socioeconomic reporting items. The Monitoring Plan notes that such items involve activities that are related to certain analytical assumptions that are pertinent to non-specific management actions, or analytical assumptions pertinent to the analysis of environmental consequences in the Proposed RMP/Final EIS (**Appendix V** – Monitoring Plan for the Proposed RMPs). The items suggested in the comment are not related directly to the analysis of socioeconomic consequences. Instead, the Proposed RMP/Final EIS has addressed the analysis of effects on these resources in the sections of Chapter 3 on Air Quality, Hydrology, Fisheries, Recreation, and Forest Management, respectively. Furthermore, the BLM has included management objectives for Air Quality, Hydrology, Fisheries, Recreation, and Forest Management (**Appendix B** – Management Objectives and Direction). Finally, the BLM has addressed monitoring of these resources in both effectiveness and implementation monitoring (**Appendix V** – Monitoring Plan for the Proposed RMPs)

Soil Resources

289. Comment Summary: The BLM should have developed a reasonable action alternative that would have reduced, as opposed to increased, the amount of detrimental soil disturbance associated with intensive harvest activities and road construction that are emphasized in the action alternatives.

Response: The Draft RMP/EIS analyzed the amount of detrimental soil disturbance that would occur under the alternatives, in addition to the detrimental soil disturbance that has already occurred. The alternatives would result in differing amounts of additional detrimental soil disturbance, based on actions such as timber harvest, road construction, and fuels reduction treatments (USDI BLM 2015, pp. 608–628). Some amount of additional detrimental soil disturbance is necessarily incidental to implementing the management actions necessary to meet the purposes of the action. That is, it would not be possible to develop a reasonable alternative that would not result in some amount of additional detrimental soil disturbance. To reduce the amount of total detrimental soil disturbance to less than the current amount of detrimental soil disturbance would require that the BLM ameliorate more total detrimental soil disturbance than any additional detrimental soil disturbance. Such an alternative is not feasible, given the economic and technical challenges of ameliorating existing detrimental soil disturbance. Amelioration of detrimental soil disturbance, through practices such as tillage, is typically only feasible during forest management operations in a stand, such as timber harvest, when the necessary machinery is on-site. Identification of specific locations of detrimental soil disturbance from past management actions and possible amelioration is typically only feasible with site inspections, which typically occur when the BLM is contemplating a new management action, such as a timber sale. It is not practical to conduct amelioration of detrimental soil disturbance over a substantial acreage in the absence of other forest management actions because of the cost. Implementation of such forest management actions would entail additional detrimental soil

disturbance, further frustrating any attempt to reach a net decrease in total detrimental soil disturbance.

The cost for measures to ameliorate detrimental soil disturbance are highly dependent on site- and project-specific factors. Furthermore, implementing such measures during forest management operations typically provides efficiencies associated with bringing machinery to the site, which the BLM cannot account for in this estimate. Any attempt to estimate average costs for ameliorating detrimental soil disturbance in the absence of other forest management actions is highly approximate and variable. Nevertheless, based on past project experiences, the BLM estimates an approximate cost of $1,000 per acre to ameliorate detrimental soil disturbance. The Draft RMP/EIS identified that there are139,299 acres of existing detrimental soil disturbance from past management action, and that the alternatives would result in additional detrimental soil disturbance ranging from 18,138 acres under Alternative A to 41,506 acres for Alternative C (USDI BLM 2015, pp. 611–612). Thus, an alternative that would result in a net decrease in the overall acreage of detrimental soil disturbance would require additional funding ranging from more than $18 million under Alternative A to more than $41 million under Alternative C, which would represent approximately a quarter to a third of the entire annual BLM budget for the decision area.

290. Comment Summary: The EIS should be revised to include more detailed information on soils, including maps of soil regions and more information on soil types.

Response: The Draft RMP/EIS included the appropriate level of information on soils to inform decision-making. The planning area covers an extensive area, and tables displaying details on each soil type present would be cumbersome, and not provide information necessary to understanding the analysis presented. The level of detail desired by the respondent is more informative to project-level planning. However, soil-mapping information is publicly available through the Natural Resources Conservation Service (NRCS). The NRCS is the Federal agency responsible for soil typing and mapping, and information on soils within the planning area can be found using their Web Soil Survey application (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm). In the implementation of the RMP, site-specific analysis prior to management actions will identify soil types, and apply appropriate management recommendations for fragile soils found on site. The BLM will identify soils unsuitable for sustained-yield timber production and add such areas to those areas reserved through updates to the Timber Production Capability Classification system (**Appendix V** – Monitoring Plan for the Proposed RMPs). The BLM can identify more effectively and accurately these specific soil types and conditions through site-specific analysis than the coarse and low accuracy mapping that would be possible at the scale of the RMP revision.

291. Comment Summary: The EIS should be revised to include Best Management Practices to protect from potential landslides from future harvest near existing State highways and considerations for public safety from landslide dangers.

Response: The Proposed RMP includes several Best Management Practices to protect from potential landslides in harvest units (**Appendix J** – Best Management Practices). The BLM designed these Best Management Practices to reduce the risk from potential landsliding because of the dangers landslides can present to human safety and infrastructure. The BLM does not design Best Management Practices differently when they are adjacent to highways—all units and roads are afforded equal measures for protection. The management direction contains the operational practices for avoiding road construction and future harvests that reduce the high potential areas for landslides during management actions. Avoiding unstable slopes and not creating unstable slopes with tillage

should protect all lands downslope, including State highways, which would also provide for public safety protections.

292. Comment Summary: The EIS should be revised to clearly disclose the locations and analyze the impacts of machine piling on soil resources. Machine piling in harvest units can cause soil compaction, reduce microbial activity, and affect tree growth.

Response: The Draft RMP/EIS analyzed the effects of machine piling on soil resources, including effects on forest productivity, and acknowledged the potential effects of machine piling (USDI BLM 2015, pp. 608–611, 617–621). The Draft RMP/EIS identified that machine piling would produce detrimental soil conditions on between 1,674 to 4,307 acres, depending on alternative. The Draft RMP/EIS identified that the effects of machine piling may bring reduced seedling growth or vegetative cover of native plants. The discussion describes the impacts from soil compaction, the reduction of microbial activity, and the potential reduction of soil processes from accumulated ground materials from mastication practices. Because machine-piling locations would be largely dependent upon timber harvest locations, it would be speculative to forecast specific machine piling locations at this scale of analysis.

293. Comment Summary: The EIS should be revised because it relies on false assumptions that OHV users will operate vehicles consistent with BLM decisions and by deferring analysis until future implementation planning. Impacts to soil from OHV use are well-documented, and the EIS fails to incorporate analysis on illegal use for this topic.

Response: The Draft RMP/EIS identified that data is unavailable at this scale of analysis to predict location or effects of any widespread or systematic illegal OHV use (USDI BLM 2015, p. 623). Across the scale of the decision area, the BLM is unable to characterize the current illegal use or forecast impacts under any of the alternatives. The BLM assumed for analytical purposes that OHV users would operate vehicles in a legal manner consistent with BLM decisions about OHV use.

Decisions about OHV use in land use planning classify lands as *open*, *limited*, or *closed*. The BLM has differed designation of individual routes for OHV use to implementation-level travel management planning (**Appendix X** – Guidance for Use of the Completed RMPs). Where the BLM has site-specific information about illegal OHV use, such as OHV users creating new trails in areas designated as *limited* to existing roads and trails, the BLM would be able to address management through implementation-level travel management planning.

294. Comment Summary: The EIS should be revised because literature citations used to determine the presumed detrimental disturbance to soil from timber harvest activities are outdated, and studies used outdated forest practices. The EIS misinterprets the study conclusions cited and applies inaccurate measures for analysis.

Response: The Draft RMP/EIS used relevant science for determining analytical methods and anticipated effects of harvest activities on soil quality. The BLM determined detrimental disturbance percentages from harvest types based upon multiple scientific sources. The commenter did not present any alternate studies for the BLM to consider and did not specifically identify misinterpreted scientific conclusions.

295. Comment Summary: The EIS should be revised because the presumed detrimental disturbance levels for timber harvest activities and road construction misrepresent modern forest practices and overstate the amount of damage. These blanket assumptions are misleading and wrong because detrimental disturbance can be and often is avoided.

Response: The Draft RMP/EIS clearly identified that analytical estimates used for both harvest actions and road construction have several limitations, and overestimate the amount of detrimental soil disturbance that would occur (USDI BLM 2015, pp. 609–611, 615–621, 625–626). Limitations identified include an inability to account for amelioration of detrimental disturbance due to the site-specific and project-specific elements that effect extent and effectiveness of the actual reductions, the inability to determine at this scale of analysis the number of temporary roads that would receive decommissioning, and constraints within modeling parameters necessitating fixed-widths for road construction. However, at this scale of analysis, the BLM cannot provide more accurate assumptions about the effects of actions on soils, and the commenter does not provide more accurate assumptions. The BLM generated the acreages of detrimental soil disturbance in the Draft RMP/EIS using the same assumptions for all alternatives. Therefore, the analysis provides an effective comparison of the relative differences in resource effects.

Trails and Travel Management

296. Comment Summary: The Proposed RMP should contain a clear schedule showing the list of Travel Management Plans needed for each BLM district with their completion dates over the next five years.

Response: The Proposed RMP/Final EIS contains the criteria for managers to apply in determining a district-level prioritized implementation travel management planning schedule in **Appendix Q** – Public Motorized Access Designation Guidelines.

297. Comment Summary: The decision to allow unauthorized user-created trails to remain in use until a Travel Management Plan is developed rewards illegal and resource-damaging behavior. 'Grandfathering' user-created OHV trails should not be allowed.

Response: The BLM is deferring implementation-level travel management planning in accordance with current BLM policy (see the Trails and Travel Management section of Chapter 3). The BLM is making area designations of *open*, *limited*, or *closed* for public motorized access through this RMP revision. Implementation-level travel management planning will evaluate each route, applying the minimization criteria contained in 43 CFR 8342 and the direction in BLM Manual 1626 – Travel and Transportation (USDI BLM 2011a) and BLM Handbook 8342 – Travel and Transportation Handbook (USDI BLM 2012), which provides policy guidance for incorporating the BLMs Travel and Transportation Management (TTM) planning decisions into the land use planning process. Under this policy, the area designation of *limited* to existing roads and trails is an appropriate use of the allocation until the BLM completes an implementation-level travel management plan.

Vegetation Modeling

298. Comment Summary: The BLM should revise the EIS because the analysis inflated the productivity estimates. The Southern Oregon Forest Restoration Collaborative (SOFRC) provides a better estimate of productivity.

Response: As explained in the Draft RMP/EIS, the BLM used the Current Vegetation Survey (CVS) permanent inventory plots, and the stand-level information found in the Microstorms database to estimate productivity on BLM-administered lands (USDI BLM 2015, pp. 98–102, 987–1043). The productivity estimates used by the SOFRC in their Rogue Basin Cohesive Forest Restoration Strategy is based upon Gradient Nearest Neighbor (GNN) analysis. This does not provide a better estimate of productivity on BLM-administered lands than what the BLM used in the Draft RMP/EIS. The CVS inventory data provides a non-biased, impartial estimate of current inventory volume and growth on BLM-administered lands. The Microstorms database also provides the best available information on forested stands on BLM-administered lands. This database is maintained by the BLM and includes descriptions of the forest vegetation, forest treatments, and forest surveys through time. The GNN analysis is based on remotely sensed, Landsat data, which is not specific to BLM-administered lands, and provides much less detail. The BLM did make use of GNN analysis in innumerable analyses in the Draft RMP/EIS, but only on non-BLM-administered lands, where the BLM lacked data comparable to the CVS plots and Microstorms database (e.g., USDI BLM 2015, pp. 100, 673, 1453).

Appendix C – Vegetation Modeling describes how the BLM used CVS and Microstorms data to model the forested vegetation. The BLM used many aspects of both data sets in the vegetation modeling. The tree lists for each modeling strata came directly from the CVS sub-plot tree lists. The BLM compared the growth on the first and second measurement of the permanent plots, with the projections from the ORGANON growth model, and found that ORGANON was adequately projecting growth. The productivity estimates in the harvest land base in the Draft RMP/EIS are similar to what the BLM has measured on the CVS plots. The BLM based the distribution of site productivity classes within each modeling unit (district) on the distribution of site productivity classes measured on the CVS plots. The productivity has not been "inflated," as the commenter contends; it provides the best representation of the actual measured conditions of forests on BLM-administered lands.

299. Comment Summary: AOCC is concerned about the BLM's modeling of the alternatives to estimate harvest acreage and volume by different harvest types.

Response: As explained in the Draft RMP/EIS, the BLM constrained the modeling of timber harvest to the volume of timber that could be produced continuously for 200 years with the management practices described in the alternatives from those lands allocated to the Harvest Land Base (USDI BLM 2015, p. 102). The BLM did not constrain the modeling of timber harvest to require consistent acreages of particular harvest types or consistent timber volumes produced by particular harvest types. As a result, the amounts of thinning and regeneration harvest does change throughout the 200-year modeling horizon. This was intentional, and there are no requirements associated with calculating a sustained yield that prohibit a change in the percentage of harvest type in different modeling periods. The fewer constraints placed on the timber harvest model, the better the model is able to achieve a higher estimate of volume. Placing arbitrary constraints within the Woodstock model to achieve even levels of thinning and regeneration harvest for the 200-year modeling horizon would have resulted in lower harvest volumes.

300. Comment Summary: The DEIS fails to disclose maps of the modeled harvest.

Response: The Draft RMP/EIS did not include maps of the modeled harvest, because the modeled harvest locations only represent a scenario of where the future harvest would actually occur. The modeled harvest is one of many different scenarios of where the harvest could occur, and does not represent any decision in principle about the specific locations of future harvest. Although the BLM used spatially explicit data from modeling outputs for several analyses in the Draft RMP/EIS, spatial display of the modeled timber harvest locations would not improve the quality of the analysis and is not necessary for a reasoned choice among alternatives.

301. Comment Summary: The Draft RMP/EIS failed to disclose the hierarchical accounting methods for reporting the acreage of the allocations under the alternatives.

Response: The Draft RMP/EIS described the vegetation modeling at length and in extensive detail in the Draft RMP/EIS, and that description summarized the information used to account for the acreage of the allocations under the alternatives (USDI BLM 2015, pp. 98–102, 987–1043). The Draft RMP/EIS did not include the specific and detailed hierarchies used in the vegetation modeling, because this is highly technical information that is not essential for the reader to understand the effects of the alternatives analyzed and is difficult to understand and interpret correctly without the context of all of the technical workings of the vegetation modeling. It is neither necessary nor practical to describe in an EIS all of the technical details for the complex vegetation modeling that the BLM conducted beyond the summary of that information provided in the Draft RMP/EIS. The BLM will provide this technical information upon request.

Wildlife

302. Comment Summary: The scope of analysis for all wildlife species should be consistent in only including BLM-administered lands.

Response: The BLM generally analyzed the effects of the alternatives on wildlife habitat and wildlife species at both the decision area scale (BLM-administered lands only) and at the planning area scale (all ownerships). The BLM analyzed the effects at both the decision area and planning area scales to evaluate the cumulative effects on wildlife species within the geographic scope of the effects of the alternatives and the Proposed RMP. For some wildlife species, data was not available across the entire planning area, so the analysis in the Proposed RMP/Final was limited to the decision area.

303. Comment Summary: The State recommends the BLM use the Oregon Conservation Strategy as part of its planning effort, and requests the BLM address in the RMP how it will address these statewide key conservation issues on BLM-administered lands consistent with the goals and actions described in the OCS.

Response: The BLM reviewed the conservation actions recommended in the Oregon Conservation Strategy against the alternatives, particularly the Proposed RMP, for consistency. The Proposed RMP/Final EIS has added specific discussion of consistency with the Oregon Conservation Strategy (see the Wildlife section of Chapter 3).

304. Comment Summary: Alternatives should address how wildlife corridors would be managed. The Middle Applegate region is the last mid-elevation wildlife corridor in the Medford District, yet little discussion of migratory corridors is contained in this analysis.

Response: The Draft RMP/EIS analyzed the effects of the alternatives using the availability of habitat within species-specific ranges and addressed dispersal for species for which there is sufficient information to support analysis. Dispersal and migration of species are dependent upon species-specific factors, and generic wildlife corridors do not provide any basis for comparative analysis of the effects of the alternatives. The commenter does not identify which species' dispersal they believe that the BLM did not adequately analyze in the Draft RMP/EIS. Without identifying the species, it is not possible to analyze the effects of the alternatives on a generic wildlife corridor.

305. Comment Summary: The DEIS does not reflect some new species listed since 1994-5.

Response: The Draft RMP/EIS identified all species that are listed under the Endangered Species Act as of the preparation of the Draft RMP/EIS. The commenter does not identify which "new species" that they believe the BLM did not reflect in the Draft RMP/EIS.

Bald Eagle

306. Comment Summary: The BLM analyzes impacts to bald eagles at the entire planning level scale, and concludes that there will be "indistinguishable" differences between the action alternatives at this scale. Given that there are only approximately 250 thousand acres of nesting habitat on BLM lands, the BLM should be looking specifically at the impacts to these various habitat patches (older forest in close proximity to large waterbodies).

Response: The BLM analyzed the effects to bald eagles at both the decision area and planning area scales and for some of the alternatives there were only minor differences in the results. As stated in the Draft RMP/EIS and Proposed RMP/Final EIS, the bald eagle habitat analysis indicates that Alternatives A, B, and D would have less than a 5 percent difference at the decision area scale and less than a 1 percent difference at the planning area scale (the gross acreage difference is < 16,080 acres). The BLM did note and discuss more meaningful differences in regards to the No Action alternative and Alternative C, which the commenter did not acknowledge.

Bureau Sensitive, Bureau Strategic, Survey and Manage Species, and Landbird Focal Species

307. Comment Summary: The Average Historic Condition (AHC) used as a comparison for habitat levels of Bureau Sensitive, Bureau Strategic, or Survey and Manage wildlife species and landbird focal species is based on one paper published by Nonaka and Spies in 2005. This paper's findings rely completely on the results of a computer model simulation exercise that is disproven by extensive research done on the subject using actual historical records. The model's outputs are essentially fabrications, based entirely on arbitrary modeling formulas and not actual observation. If depicting an AHC is necessary to the analysis in the Draft RMP/EIS, research that includes actual historic data should be used, rather than relying on a computer model of questionable rigor and usefulness.

Response: The BLM used peer-reviewed, published scientific literature to provide a context for the habitat development in the analyses. The purpose of the analysis is to inform the BLM decision-makers as to the relative differences in effects among the action alternatives, the No Action alternative, and the No Timber Harvest reference analysis. The BLM provided representations of average historical condition of the forest structural stage composition (e.g., Nonaka and Spies 2005, Wimberly 2002) to provide further context of the effects. The modeling in both Nonaka and Spies 2005 and Wimberley 2002 provide reliable depictions across broad geographic and temporal scales of the range of historic forest structural conditions. These two peer-reviewed published papers rely on high-quality scientific information as the foundation for their modeling and provide analytical conclusions that are generally consistent. It is not possible to rely instead on "actual historical records," as urged by the commenter, because such records are not sufficient to characterize the entire landscape of the decision area or planning area over broad temporal scales, which is the necessary analytical context that the BLM has used these papers to provide.

308. Comment Summary: The RMP should look to integrate timber harvest objectives with conservation objectives, particularly for complex early seral habitat. In the Wildlife & Wildlife Habitat section (p. 157), relevant studies need to be included (e.g., Swanson *et al.* 2011; Olson *et al.* 2012; DellaSala *et al.* 2014) and the distinction between complex early seral (created by natural disturbances and impacted by logging) and early seral (created by forestry and in abundance due to logging) needs to be made clear in order to represent the best science omitted from the RMP.

Response: All alternatives and the Proposed RMP would increase the amount of early successional forest habitat in 50 years and the BLM recognizes the distinction between complex and simple early seral forest habitats. The structural stages used throughout the analyses in the Proposed RMP/Final EIS have two categories of early seral habitat: Early Successional Forests *with* Structural Legacies and Early Successional Forest *without* Structural Legacy. The BLM regards Early Successional Forest with Structural Legacies as analogous to complex early successional habitat as described by DellaSala *et al.* (2014) and Swanson *et al.* (2011). In addition, management direction regarding green tree retention, snag retention (or creation), and down woody material retention would add to the complexity of that early successional habitat. The BLM has reviewed the suggested literature and added these citations and discussion of the differences in complex early successional habitat development in terms of young stands that do (or do not) have structural legacies to the Proposed RMP/Final EIS (see Wildlife section of Chapter 3). The BLM has integrated timber harvest objectives with conservation objectives in the design of the action alternatives and the Proposed RMP with varying approaches. Specifically, the BLM has incorporated regeneration harvest with varying levels and patterns of retention and uneven-aged management approaches into several action alternatives and into the Proposed RMP, which would create complex early seral habitats.

309. Comment Summary: Stream restoration can destroy or prevent the development of open habitats that provide turtle nesting habitat as well as sunny areas within the stream environment to allow for foraging and basking. The western pond turtle requires aquatic habitat for feeding/basking and open upland habitat for nesting/overwintering.

Response: Under all alternatives, the BLM would manage naturally occurring special habitats, such as wetlands and natural ponds, to maintain their ecological function. Additionally, stream restoration would benefit pond turtle habitat. Stream restoration actions, such as log and boulder placement and fish passage improvements that are beneficial to fish habitat, would also result in short-term increases in sediment delivery to stream channels. Removal of culverts and other instream structures like

blockages would cause stream channel disturbance during summer instream operating periods. The addition of structure to stream channels would create additional pools and slow-flowing, shallow areas that would be favorable for pond turtles.

310. Comment Summary: Page 680 of the DEIS indicates that the BLM intends to rely upon projected increases in hypothetical habitat for Bureau Sensitive Species (BSS) and (former) Survey and Manage species rather than protecting the actual known sites where these species occur. Trading occupied actual habitat for hypothetical future habitat is arbitrary and capricious.

Response: The action alternatives would remove Survey and Manage measures, which require pre-disturbance surveys and protection of known sites. Even in the absence of such measures, habitat and sites of Survey and Manage species that fall within the reserve system would generally be protected by the management direction of the reserve land use allocations, which would generally protect existing Mature and Structurally-complex Forest habitat and foster the development of additional Mature and Structurally-complex Forest habitat. Under the No Action alternative, 36 percent of known sites of Survey and Manage wildlife species would fall within the reserve system. Under the action alternatives and the Proposed RMP, the proportion of sites that would fall within the reserve systems would increase substantially: 86 percent under Alternative A, 68 percent under Alternative B, 66 percent under Alternative C, 70 percent under Alternative D, and 73 percent under the Proposed RMP. Thus, the majority of "actual known sites" for Survey and Manage wildlife species would continue to be protected under the action alternatives and the Proposed RMP, even without the Survey and Manage measures. Even in the absence of the Survey and Manage measure, habitat and sites of species that fall within the reserve system would receive some protection. Not all sites within reserve land use allocations would necessarily be protected by buffers comparable to the No Action alternative. However, management actions in reserves could occur within these sites, but there would be a minimal effect to the species based on the type and intensity of allowable treatments. Under all action alternatives and the Proposed RMP, management direction in reserves would largely limit stand treatments to thinning to improve habitat conditions and fuels treatments to reduce the risk of uncharacteristic wildfire, and would generally preclude stand treatments that would remove or degrade Mature and Structurally-complex habitat (**Appendix B** – Management Objectives and Direction).

Under the action alternatives, the amount of existing Mature or Structurally-complex Forest habitat within the reserve network would increase (from 65 percent under the No Action Alternative to at least 72 percent). The Proposed RMP would reserve 83 percent of existing Mature or Structurally-complex Forest habitat, while only 65 percent is reserved under the No Action alternation. Therefore, despite the absence of Survey and Manage measures, more habitat for species associated with older forests would be reserved and protected under the Proposed RMP than under the No Action alternative.

In addition to reserving existing older and more structurally-complex, multi-layered conifer forests, the acreage of Mature and Structurally-complex Forest (which is a broader category than older and more structurally-complex multi-layered conifer forests) in the decision area would increase over time under all alternatives. Therefore, the amount of habitat for Survey and Manage wildlife species would also increase under all alternatives.

The BLM does not agree that omitting the Survey and Manage measures from the Proposed RMP is arbitrary and capricious. The BLM considers the increased habitat protection and habitat development under the Proposed RMP to be a sound management approach for these species. The Proposed RMP would protect the majority of the "actual known sites" of Survey and Manage wildlife species, would

reserve more of the potential habitat for Survey and Manage species than the No Action alternative, and would provide a greater increase in the amount of potential habitat for Survey and Manage species over time than the No Action alternative. Finally, under the Proposed RMP, the BLM would continue to provide management for many of the Survey and Manage species as Bureau Sensitive species. The Draft RMP/EIS analyzed the effects of the alternatives on Survey and Manage species, and the BLM used that analysis in the development of the Proposed RMP (see the Rare Plants and Fungi and Wildlife sections of Chapter 3).

311. Comment Summary: The RMP must provide more detail and clarification of a monitoring and evaluation strategy to determine if protection objectives for Survey and Manage species are being achieved during implementation.

Response: Monitoring provides information to determine whether the BLM is following the RMP management direction (implementation monitoring) and to verify if the implementation of the RMP is achieving plan-level desired results (effectiveness monitoring). The monitoring plan included in the Proposed RMP/Final EIS include implementation monitoring questions related to Bureau Special Status Species, and the BLM would continue to rely on the existing interagency effectiveness monitoring modules to address key questions about whether the RMP is effectively meeting its objectives, including the module for late-successional and old growth ecosystems (**Appendix V** – Monitoring Plan for the Proposed RMPs).

The BLM does not agree that the monitoring plan should directly address Survey and Manage species, because the Proposed RMP does not have "protection objectives" for Survey and Manage species. Given that there is no management direction for Survey and Manage species in the Proposed RMP, there is no need to address Survey and Manage species in implementation monitoring. Given that there are no management objectives for Survey and Manage species in the Proposed RMP, there is no need to address Survey and Manage species in effectiveness monitoring.

312. Comment Summary: The BLM's draft RMP for Western Oregon does away with a biologically-driven snag retention standard, replacing it with draft standards that treat existing and newly created snags as interchangeable, and averages the snag density standards across the "scale of the harvest unit" which could be hundreds, if not thousands, of acres.

Response: The alternatives in the Draft RMP/EIS explored a variety of snag retention and creation requirements. Alternative A did not include any snag retention or creation targets. Alternative C included targets for snag retention or creation in the reserve network similar to those used in the 2008 FEIS. Alternatives B and D included snag retention and creation targets based on the desired conditions for wildlife species as interpreted from the Decayed Wood Advisor (DecAID) (Mellen-McLean *et al*. 2012) in conjunction with estimates of the current abundance of snags and down wood from the CVS inventory plots (see the Snags and Down Woody Material section of **Appendix S** – Other Wildlife). The BLM maintains that the information from DecAID and CVS inventory plots provides information that better reflects the needs of snag-dependent species than the snag retention requirements in the 1995 RMPs. The Proposed RMP includes the snag retention and creation targets similar to Alternatives B and D.

The action alternatives do not "treat existing and newly created snags as interchangeable," contrary to the commenter's assertion. The management direction for Alternatives B and D clearly requires the retention of existing snags and separately requires the creation of new snags, independent of the

amount of existing snags (USDI BLM 2015, pp. 962, 984). The Proposed RMP includes the snag retention and creation targets similar to Alternatives B and D.

In addition, while the management direction for the Proposed RMP directs snag densities at the scale of the harvest unit, the commenter's assertion that harvest units could be "hundreds, if not thousands, of acres" is erroneous. Given the typical checkerboard of BLM-administered lands, much of the BLM-administered lands occur in square mile sections (640 acres), which are themselves composed of a myriad of stand types further intertwined with the Riparian Reserve and other land-use allocations. Such practical considerations of land ownership and land use allocations necessarily limit timber harvest unit sizes. The output form vegetation modeling for the analysis in this Proposed RMP/Final EIS (**Appendix C** – Vegetation Modeling) indicated that more than 99 percent of regeneration harvest units in the first decade of implementation would be less than 100 acres in size, and all regeneration harvest units would be less than 250 acres in size. Therefore, there is little prospect of BLM implementing extremely large harvest units under any alternative or the Proposed RMP. Regardless, the commenter does not explain how providing snags at densities averaged over entire harvest units would adversely affect any resources in a manner not addressed in the Draft RMP/EIS.

Deer and Elk

313. Comment Summary: The DEIS attributes reductions in deer and elk populations to reductions in timber harvest levels without considering other factors which may be causing the population declines.

Response: As stated in the Draft RMP/EIS, the Oregon Department of Fish and Wildlife identifies availability of early successional forest stages as a potential limiting factor (USDI BLM 2015, p. 676). The Proposed RMP/Final EIS has added additional discussion regarding potential sources of deer and elk population declines.

Fisher

314. Comment Summary: Landscape scale spatially explicit analysis is needed in this RMP process to identify critical habitat for fishers for protection and enhancement of key elements.

Response: The Draft RMP/EIS included management direction common to all action alternatives that would provide some protection for key elements of fisher habitat (denning structures). The Proposed RMP has included additional management direction that would provide protection and enhancement of key elements for fisher as well (denning structures and canopy cover) and would avoid disruption of normal denning behaviors (**Appendix B** – Management Objectives and Direction).

315. Comment Summary: The Pacific fisher will be impacted by increased regeneration harvesting, increased commercial thinning, decreased riparian buffers, abandonment of the ACS, and increased road building proposed in the DEIS. This impact was not adequately analyzed in the DEIS document. A detailed analysis of the Pacific fisher, its population, viability, and conservation status under different alternatives is needed in the FEIS.

Response: The Draft RMP/EIS conducted a detailed and quantified analysis of the effects of the alternatives on fisher habitat. The Proposed RMP/Final EIS has added quantified forecasts of impacts to the fisher population in southwestern Oregon. The fisher habitat modeling used the vegetation modeling output, which incorporated changes in vegetation over time under the alternatives from integrating the effects of timber harvest, wildfire, and forest growth. Therefore, the BLM reflected changes in harvest or buffer regimes in the habitat modeling results presented in Chapter 3.

316. Comment Summary: The State recommends that the BLM identify barriers to dispersal, and plan habitat restoration to ensure connectivity and terrestrial corridors for fisher in the RMP.

Response: The Draft RMP/EIS did not identify barriers to fisher dispersal, because the BLM does not regard dispersal as a limiting factor for fisher. Fishers have a large home range size (males 13,329 acres; females 4,692 acres) and the ability to disperse long distances (males disperse an average of 18.0 miles; females disperse an average of 3.7 miles). Dispersing juvenile fisher are capable of moving long distances (up to 84 miles) and navigating across or around various landscape features, including rivers, highways, and rural communities. The BLM contends that availability of denning habitat and denning structures are more limited and have a more important influence on fisher than dispersal.

317. Comment Summary: The RMP fails to restrict OHV use in areas of denning fishers.

Response: The commenter is mistaken. The action alternatives and the Proposed RMP would restrict all management actions that would disturb denning fishers. All action alternatives included management direction that would restrict activities that create noise or visual disturbance(s) above ambient conditions within 0.5 miles of known fisher natal and maternal den sites from February 1 to June 30 (USDI BLM 2015, p. 937). The Proposed RMP includes management direction that the BLM would not approve, fund, or carry out actions that would disrupt normal fisher behaviors (e.g., foraging, resting, or denning) associated with known natal or maternal denning sites except when done in accordance with an approved recovery plan, conservation agreement, species management plan, survey and monitoring protocol, or critical habitat rule and the action is necessary for the conservation of the species (**Appendix B** – Management Objectives and Direction). In areas allocated as *limited* for public motorized access, the BLM would consider specific restrictions on OHV use near fisher den sites during implementation-level travel management planning (**Appendix Q** – Public Motorized Access Designation Guidelines).

Golden Eagle

318. Comment Summary: Every action alternative includes more acres designated for ORV use while no analysis or data is provided regarding actual impacts to golden eagle populations and behavior.

Response: The commenter is mistaken. All action alternatives and the Proposed RMP would eliminate areas *open* to public motorized vehicle use and increase the areas *closed* to public motorized vehicle use (USDI BLM 2015, p. 639). In addition, all action alternatives and the Proposed RMP include management direction that would prohibit activities that will disrupt nesting where bald eagles or golden eagles are actively nesting common to all alternatives (**Appendix B** – Management Objectives and Direction). All action alternatives and the Proposed RMP would also prohibit

operation of off-road vehicles within 330 feet of bald eagle or golden eagle nests during the breeding season under the action alternatives. Finally, all action alternatives and the Proposed RMP would prohibit operation of off-road vehicles within 660 feet of bald eagle or golden eagle nests during the breeding season in areas without forest cover or topographic relief to provide visual and auditory screening (USDI BLM 2015, p. 936; **Appendix B** – Management Objectives and Direction). The commenter does not explain how public motorized vehicle use could affect golden eagle populations in light of these prohibitions.

Greater Sage-Grouse

319. Comment Summary: The RMP needs to identify conservation measures in greater sage-grouse habitat.

Response: All action alternatives included the conservation measure to manage unoccupied or historic sage grouse habitat consistent with the Oregon Sage-Grouse Action Plan (USDI BLM 2015, p. 913). The Proposed RMP has also included conservation measures to cut junipers encroaching on unoccupied or historic sage-grouse habitat and to plant native species to improve unoccupied or historic sage-grouse habitat (**Appendix B** – Management Objectives and Direction).

Gray Wolf

320. Comment Summary: In an effort to most effectively contribute to the conservation and recovery of the gray wolf (*Canis lupus*), the Service would like the BLM to begin its seasonal restriction within one mile of an active den on April 1st instead of April 30th. The Service believes that extending this restriction to July 15 (as opposed to August 31) would be sufficient to protect the young of the year as they are likely to have left their den sites by then.

Response: The Proposed RMP has added management direction restricting activities that create noise or visual disturbance(s) above ambient conditions within one mile of known active gray wolf dens from April 1 to July 15, consistent with the commenter's suggestion (**Appendix B** – Management Objectives and Direction).

321. Comment Summary: The DEIS fails to analyze impacts to wolf from road densities and road construction, grazing, and project activities associated with timber harvest. The BLM needs to develop standards to ensure that road densities in the forests it manages remain below road densities over 1 mile per square mile or manage areas over this road density to prevent any new temporary or permanent road construction.

Response: The Proposed RMP/Final EIS includes additional discussion and analysis regarding road density and gray wolves (see the Wildlife section in Chapter 3).

The BLM does not agree that a road-density threshold of 1 mile per square mile is needed for wolf conservation. Increased land development (e.g., road development) has the potential to make some areas less suitable for wolf occupancy. However, it is unlikely that increased land development in the planning area would, in fact, adversely affect wolves. Wolves are habitat generalists and one of the most adaptable large predators in the world. They were extirpated in the southern portion of the

subspecies' range only because of sustained, deliberate, human-targeted elimination. Land-use restrictions on land development are not necessary to ensure the continued conservation of the subspecies; even active wolf dens can be quite resilient to nonlethal disturbance by humans. Vast areas of suitable wolf habitat and the current wolf population are secure in the subspecies' range (e.g., national parks, wilderness, road-less areas) and are not available for intensive levels of land development (78 FR 35681).

In addition, current road densities on BLM-administered lands are 3.70 miles per square mile (see the Trails and Travel Management section of Chapter 3). Given that wolves are actively colonizing and establishing packs in areas with an existing road density of 3.70 miles/sq. mile (as evidenced by the Rogue pack and Keno pair), the BLM concludes that wolves in the planning area are resilient to road densities at current levels.

Marbled Murrelet

322. Comment Summary: The State recommends the BLM analyze the number of known or historic occupied marbled murrelet sites within 0.25 miles of adjoining private lands to determine the potential impact to occupied marbled murrelet sites that span property boundaries and the potential impact to timber volume output.

Response: The Draft RMP/EIS identified known and historic marbled murrelet sites (USDI BLM 2015, pp. 732–733). Segregating these sites by proximity to private lands would not improve the quality of the analysis or provide for a reasoned choice among the alternatives. The BLM has no reasonable way to predict the management actions private landowners would take in response to marbled murrelet sites on BLM-administered lands or estimate whether there would be any effects of marbled murrelet sites on BLM-administered lands on the timber volume production of adjacent landowners.

323. Comment Summary: The conservation strategy for marbled murrelets should include protecting remaining large patches of older-aged forests with minimal edge, buffering nest sites from windthrow and predators, and maintaining habitat connectivity. The system of LSRs on BLM lands continues to be critical to murrelet conservation. The watershed, juxtaposition of occupied murrelet habitat, and ownership should all be considered in thinning operations within LSRs or adjacent to older-aged forest.

Response: The BLM would protect all older, more structurally-complex forest through the designation of such stands as Late-Successional Reserve, which would benefit marbled murrelets. The BLM analyzed the effects of the alternatives on patch size of marbled murrelet nesting habitat and discussed the effects of smaller or larger patches on marbled murrelets in Chapter 3.

324. Comment Summary: Does BLM have data to support its claim on p. 150 that when sufficient habitat is present the marbled murrelet population still declines? How can BLM conclude this when nearly all habitat (80%) was eliminated on public lands prior to the NWFP?

Response: The commenter mischaracterizes the statement in the Draft RMP/EIS. The Draft RMP/EIS did not claim that when sufficient habitat is present, the marbled murrelet population still declines. The Draft RMP/EIS stated that even when sufficient high-quality nesting habitat is available, other

factors (i.e., climate events and climate change) can influence murrelet populations (either positively or negatively) by affecting conditions important for prey species (USDI BLM 2015, p. 150). The Draft RMP/EIS detailed the variety of the factors affecting marbled murrelet populations, which include loss of nesting habitat, but also non-habitat factors. Specifically citing the U.S. Fish and Wildlife Service 2009 review, the Draft RMP/EIS identified that changes in prey abundance and availability and climate change are among the threats to the marbled murrelet population (USDI BLM 2015, pp. 720–721). The Draft RMP/EIS acknowledged that there is a strong association between total marbled murrelet populations and the total amount of suitable habitat. Nevertheless, there are other factors besides habitat affecting marbled murrelet populations. Thus, the BLM maintains that even when sufficient high-quality nesting habitat is available, other factors can influence murrelet populations. The commenter offers no evidence to dispute this point.

325. Comment Summary: Alternatives fail to include all of the conservation measures necessary to provide for the survival and recovery of Marbled Murrelet populations (e.g., protect all current occupied sites on Federal land, protect habitat within 55 miles of the coast, survey habitat within 55 miles of the coast, and maintain NWFP LSRs).

Response: The Draft RMP/EIS analyzed a range of strategies to contribute to the conservation and recovery of marbled murrelets.

Under the No Action alternative, Alternatives A, B, and D, and the Proposed RMP, the BLM would protect all current occupied marbled murrelet sites (USDI BLM 2015, pp. 733–737; see the Wildlife section of Chapter 3).

The BLM does not agree that surveying and protecting all habitat within 55 miles of the coast is necessary for the survival and recovery of the marbled murrelet. As explained in the Draft RMP/EIS, the BLM describes the inland range of the marbled murrelet based on the two management zones for the marbled murrelet established in the Northwest Forest Plan: Zone 1 from the coast to approximately 35 miles inland, and Zone 2 from the eastern boundary of Zone 1 to approximately 50 miles inland from the coast. Marbled murrelet nesting has been documented only up to 47 miles from the coast in Oregon. Therefore, the BLM considers the effects to marbled murrelets and their habitat within 50 miles of the coast as the appropriate geographic scope. The commenter does not provide any evidence that habitat beyond 50 miles from the coast is used by marbled murrelets in the planning area.

The No Action alternative and Alternative D would require surveys and protection of occupied sites throughout the marbled murrelet range. Alternative B would require surveys and protection of occupied sites in Zone 1, but not in Zone 2. Alternatives A and C would not require surveys and protection of occupied sites. The Draft RMP/EIS analyzed the effects of these different approaches and projected the potential loss of future occupied sites under each alternative. That analysis concluded that the approach in Alternative B would result in the loss of relatively few marbled murrelet sites (USDI BLM 2015, pp. 730–736). The BLM developed the Proposed RMP approach to marbled murrelet management similar to the approach of Alternative B based on the results of that analysis. The commenter does not dispute the accuracy of this analysis. The BLM has updated that analysis in the Proposed RMP/Final EIS based on additional information, but the basic analytical conclusions about the effects of different marbled murrelet survey and site protection measures remain unchanged (see the Wildlife section of Chapter 3).

The BLM does not agree that maintaining the Northwest Forest Plan Late-Successional Reserve is necessary for the survival and recovery of the marbled murrelet. Under all action alternatives,

including the Proposed RMP, the Late-Successional Reserve is larger than under the No Action alternative (i.e., the Northwest Forest Plan), providing increased benefits to the marbled murrelets. The commenter does not explain how maintaining the smaller Late-Successional Reserve under the No Action alternative would better contribute to the conservation and recovery of the marbled murrelet. Under all action alternatives and the Proposed RMP, more of the current marbled murrelet nesting habitat would be within reserve land use allocations than under the No Action alternative. Under Alternatives A, B, and D, and the Proposed RMP, the amount of high-quality marbled murrelet nesting habitat would increase more than under the No Action alternative (USDI BLM 2015, pp. 726, 734; see the Wildlife section of Chapter 3).

The BLM contends that the Proposed RMP would better contribute to the conservation and recovery of the marbled murrelet than the No Action alternative, because the Proposed RMP would provide a larger Late-Successional Reserve, would reserve more marbled murrelet nesting habitat, and would result in a larger increase in high-quality marbled murrelet nesting habitat over time.

326. Comment Summary: The Preferred Alternative states there will be no disruption to murrelets. FWS would like to see it state that no disruption would apply to both known and predicted murrelet sites.

Response: The Proposed RMP and Alternative B would restrict activities that disrupt marbled murrelet nesting during the nesting period where marbled murrelets are currently nesting. This restriction would apply to all sites where marbled murrelets are nesting, including both currently known sites and sites that the BLM identifies in the future, consistent with the commenter's suggestion.

327. Comment Summary: Increased clearcutting within Riparian Reserve is in direct conflict with FWS' 1997 Recovery Plan for the Marbled Murrelet, which recommends that mature forests within "secured areas" (such as Riparian Reserve) be protected so they can serve as future nesting habitat for the marbled murrelet.

Response: The commenter is mistaken: none of the alternatives would include clearcutting within Riparian Reserve. Under all alternatives and the Proposed RMP, the only timber harvest within the Riparian Reserve would be thinning in some portions of the Riparian Reserve for some specific restoration purposes. Clearcutting is a component of the Harvest Land Base under Alternatives A and C; all other alternatives, including the Proposed RMP, would employ regeneration harvest with varying levels of stand retention (see the Forest Management section of Chapter 3). Furthermore, more of the current marbled murrelet nesting habitat would be within reserve land use allocations under the action alternatives and the Proposed RMP compared to the No Action alternative. As a result, regardless of the distinction between clearcutting and regeneration harvest with retention, several of the action alternatives and the Proposed RMP would result in less timber harvest of marbled murrelet nesting habitat across the landscape compared to the No Action alternative (see the Wildlife section of Chapter 3).

North Oregon Coast Distinct Population Segment of the Red Tree Vole

328. Comment Summary: Pages 738 and 744 of the DEIS indicate that Alternatives A and C would negatively affect the red tree vole by logging 136 of 383 known sites. Given the acknowledgment that "every RTV site in the NOCDPS is critical for persistence" of the species, the contention on page 744 that the BLM is unsure if such logging would contribute to the need to list the species under the ESA is in error.

Response: The statement "Since every red tree vole site in the North Oregon Coast DPS is critical for persistence …" in the Draft RMP/EIS was in error. The BLM could not support that statement given the uncertainties around population numbers, trend, and distribution of the North Oregon Coast DPS of the red tree vole. The Proposed RMP/Final EIS has deleted this statement. The Proposed RMP/Final EIS has updated the discussion of the effects for the North Oregon Coast DPS of the red tree vole. Because the population status or population trend of red tree voles in the North Oregon Coast DPS is unknown, it is also unknown the extent to which loss of occupied stands would negatively affect the population of red tree voles in the North Oregon Coast DPS. In any event, the Proposed RMP would include direction to conduct pre-disturbance surveys and known site management (habitat areas) for red tree voles in the North Oregon Coast DPS north of Highway 20 and known site management south of Highway 20 within the reserves.

329. Comment Summary: Analysis of effects to red tree vole does not consider number of sites affected or genetic connectedness.

Response: The commenter is mistaken; the Draft RMP/EIS did address the number of sites affected and population connectivity. The Draft RMP/EIS considered observations (one measure of the number of sites) of red tree voles within the North Oregon Coast DPS. The Draft RMP/EIS included a tabulation of the number of observations by land use allocation and forecast the number of future red tree vole sites that would be identified and protected under the alternatives. Finally, the Draft RMP/EIS included a discussion of the effects of different management approaches on the North Oregon Coast DPS of the red tree vole, including how the loss of sites under some alternatives would affect population interaction and connectivity in the North Oregon Coast DPS (USDI BLM 2015, pp. 738–745).

330. Comment Summary: FWS strongly recommends that, within the North Oregon Coast Distinct Population Segment of the red tree vole, BLM carry forward into their RMP the existing management that they are doing for the red tree vole under the Survey and Manage standards and guidelines of the NWFP.

Response: The No Action alternative and Alternatives B and D would include direction to conduct pre-disturbance surveys and known site management (habitat areas) for red tree voles in the North Oregon Coast DPS. The Proposed RMP would include direction to conduct pre-disturbance surveys and known site management (habitat areas) for red tree voles in the North Oregon Coast DPS north of Highway 20 and known site management south of Highway 20 within the reserves. Surveys and known site management are some of the primary components of the Survey and Manage measures (**Appendix B** – Management Objectives and Direction).

Northern Spotted Owl

331. Comment Summary: The BLM should include the 2014 northern spotted owl demographic meta-analysis and individual demographic study area annual reports in its analysis.

Response: The commenter appears to confuse the northern spotted owl portion of the Northwest Forest Plan 20-year monitoring report (Davis *et al*. 2015), which was released in draft form, with the newest northern spotted owl meta-analysis, which has not yet been released at the time of the preparation of the Proposed RMP/Final EIS. The lead author of the new meta-analysis, Dr. Katie Dugger, Oregon State University, provided the BLM with meta-analytical results pertaining to northern spotted owl populations in the eight Federal demographic study areas, northern spotted owl survival and fecundity rates, and barred owl encounter rates. The Proposed RMP/Final EIS has updated its northern spotted owl models using those results, as appropriate. The BLM does not use the annual results from individual demographic study areas, because they are not analytically credible due to their sample sizes; hence, the need for a meta-analysis about every 5 years.

332. Comment Summary: It makes no sense to manage for northern spotted owl habitat when there are other factors affecting northern spotted owl survival. Establishment of large, contiguous blocks of late-successional forest has been shown to not provide any benefit to the conservation of the spotted owl due to the overwhelming presence and competition from the barred owl.

Response: Complex problems, such as northern spotted owl recovery, commonly require multiple, collaborative solutions. The Draft RMP/EIS demonstrated that habitat management alone would not be sufficient for conservation and recovery of the northern spotted owl, but habitat management remains a necessary component of northern spotted owl conservation and recovery (USDI BLM 2015, pp. 746–826). As detailed in the Draft RMP/EIS, the U.S. Fish and Wildlife Service identified in the revised recovery plan for the northern spotted owl the continuing need for habitat management and also acknowledged the effects of competitive interactions between northern spotted owls and barred owls and outlined a strategy to address the barred owl. Thus, the BLM, as recommended by the Service's recovery plan, is addressing the habitat component of northern spotted owl recovery. In addition, the Draft RMP/EIS identified a potential mitigation measure of BLM participation in a future barred owl management program and analyzed the effectiveness of such a mitigation measure (USDI BLM 2015, pp. 40, 778–780). The Proposed RMP has incorporated this mitigation measure and has added management direction related to "take" of northern spotted owls (see Chapter 2). Therefore, the Proposed RMP includes management of northern spotted owl habitat, management of northern spotted owls, and future management of barred owls, all of which are necessary components of northern spotted owl conservation and recovery.

333. Comment Summary: "The RMP ignores the checkerboard character of the majority of the O&C lands" and managing for contiguous northern spotted owl habitat is futile because of the checkerboard BLM ownership.

Response: The Draft RMP/EIS evaluated northern spotted owl habitat conditions on all land ownerships, and the results of that analysis clearly demonstrate that the commenter's claims are incorrect. The Draft RMP/EIS forecasted habitat changes on all land ownerships within the United States' portion of the northern spotted owl's range and determined that BLM-administered lands in the checkerboard ownership are capable of contributing to large habitat blocks of northern spotted owl nesting-roosting habitat and to northern spotted owl movement and survival between and through the large blocks (USDI BLM 2015, pp. 746–774). The commenter identifies no error in that analysis.

334. Comment Summary: The northern spotted owl analyses are missing important information such as northern spotted owl migratory habits, the effects of reduced harvest levels under the Northwest Forest Plan on barred owl abundance and competition with northern spotted owls, and interbreeding by the two species.

Response: The BLM presumes that the commenter confused east-west connectivity between the Oregon Cascades and Coast Range with northern spotted owl migration. The BLM correctly characterized east-west connectivity as pertaining to northern spotted owl dispersal across the landscape by individual owls looking for mates and available nesting habitat (USDI BLM 2015, pp. 764–774). Northern spotted owls are not migratory, in that the range of the species does not vary by season.

The BLM is unaware of credible data on how past timber harvest levels on BLM-administered lands have affected, if at all, competitive interactions between northern spotted owls and barred owls. Thus, there is no basis for a credible analysis. The BLM does not address interbreeding between northern spotted owls and barred owls, as there is no evidence that interbreeding is having a measurable effect on the northern spotted owl population or that the BLM could affect interbreeding through land use planning. The commenter does not present any information, evidence, or data that would provide a basis for the BLM to analyze the effect of reduced harvest levels on barred owl abundance and competition with northern spotted owls, or the effect of interbreeding by the two species.

335. Comment Summary: The BLM should increase the barred owl encounter rate over time to reflect the true growth rate of this population and its effect on northern spotted owls.

Response: The Draft RMP/EIS used observed estimated barred owl encounter rates from the most recent northern spotted owl meta-analysis available at that time (USDI BLM 2015, pp. 778–780). The Proposed RMP/Final EIS has updated the barred owl encounter rates used in the analysis based on the newest northern spotted owl meta-analysis, which had not yet been released at the time of the preparation of the Proposed RMP/Final EIS. The commenter's suggestion that the BLM increase the encounter rate over time to reflect "the true growth rate" of the barred owl cannot be done, because, as the meta-analyses indicate, barred owl encounter rates change over time differently—and, thus, not predictably—in each demographic study area. In addition, the barred owl will reach carrying capacity in some areas at some time, and there exists no information that would allow the BLM to predict, reasonably, when, where, and at what levels barred owl populations will stabilize.

The BLM did expanded the analyses of Alternative C and the No Timber Harvest reference analysis by using modified barred owl encounter rates developed by the U.S. Fish and Wildlife Service. The BLM ran these analyses for Alternative C and the No Timber Harvest reference analysis because these would bracket the outcomes of all alternatives using the modified encounter rates (USDI BLM 2015, p. 779). However, the BLM did this only to determine the range of northern spotted owl population responses to a potential future barred owl management program.

336. Comment Summary: By withdrawing from the Northwest Forest Plan, the BLM puts existing habitat conservation plans, the northern spotted owl recovery plan and the basis for northern spotted owl critical habitat designations at immediate risk.

Response: The Draft RMP/EIS explained that the BLM needs to revise existing plans to replace the 1995 RMPs' land use allocations and management direction because of new scientific information and policies related to the northern spotted owl. Since the approval of the 1995 RMPs, there have

been analyses on the effects of land management on northern spotted owl habitat, demographic studies, and analyses of the effects of barred owls on northern spotted owls. In addition, since that time, the U.S. Fish and Wildlife Service has developed new policies for northern spotted owls, including a revised recovery plan and a new designation of critical habitat (USDI BLM 2015, p. 5).

The Draft RMP/EIS provides a reasoned analysis based on detailed and quantified information on the effects of the alternatives on northern spotted owls and northern spotted owl habitat, including designated critical habitat (USDI BLM 2015, pp. 746–826). Therefore, the Draft RMP/EIS took a 'hard look' at the effects of the alternatives on northern spotted owls and northern spotted owl habitat.

The BLM is unaware of, and the commenter does not identify, any habitat conservation plan that would be 'at risk' from any of the alternatives.

As verified by the northern spotted owl analysis in the Draft RMP/EIS, which specifically examined the consistency of the various alternatives with the northern spotted owl revised recovery plan and final rule on northern spotted owl critical habitat, all alternatives would be consistent with the recovery plan and final rule, and none would place these strategies 'at risk.'

Regardless, the CEQ regulations require that an EIS analyze the environmental effects of the alternatives and explains that effects include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health" (40 CFR 1502.16, 1508.8). Habitat conservation plans, recovery plans, and critical habitat rules—in contrast to the resources to which they pertain—do not constitute an ecological, aesthetic, historic, cultural, economic, social, or health resource that could be affected by the BLM action. If a harm does not have a sufficiently close connection to the physical environment, NEPA does not apply (*Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766 (1983)). The Draft RMP/EIS analyzed the effect of the RMP revision on northern spotted owl and on northern spotted owl habitat, including designated critical habitat. Beyond that, the continued validity of any habitat conservation plan, recovery plan, or critical habitat rule itself lacks a sufficiently close connection to the physical environment to be analyzed in an EIS.

337. Comment Summary: The documents cited in the Draft RMP justifying the need to maintain "large, contiguous blocks of late-successional forest" are outdated and have since been proven false or have been superseded by future decisions.

Response: The Draft RMP/EIS identified that maintaining large, contiguous blocks of late-successional forest is a part of the purpose for the action, based on scientific information, the results of previous analyses, and the recommendations in the northern spotted owl revised recovery plan (USDI BLM 2015, pp. 7–8).

Although scientists first identified large blocks of older forest as a conservation need of the northern spotted owl in 1990, the importance of such large blocks has been reaffirmed by ongoing science. The Draft RMP/EIS cited the most recent research in this area, which validates the importance of older forest conditions and managing for large blocks of unfragmented older forest (USDI BLM 2015, p. 774).

Contrary to the commenter's claim, the U.S. Fish and Wildlife Service did not dismiss the need for large blocks of older forest in the 2011, revised recovery plan for the northern spotted owl or the 2012 final rule on northern spotted owl critical habitat. Instead, the U.S. Fish and Wildlife Service identified management needs *in addition to* large blocks of older, contiguous forest specifically to

help compensate for the loss of such blocks fragmented by past management actions. As the U.S. Fish and Wildlife Service stated in the 2012 final rule on critical habitat (77 FR 71908):

> *"The natural ecological processes and landscape that once provided large areas of relatively contiguous northern spotted owl habitat (especially on the west side of the Cascade Range) have been altered by a history of anthropogenic activities, such as timber harvest, road construction, development, agricultural conversion, and fire suppression. The resilience of these systems is now additionally challenged by the effects of climate change. As recommended in the Revised Recovery Plan for the Northern Spotted Owl, active forest management may be required throughout the range of the owl with the goal of maintaining or restoring forest ecosystem structure, composition, and processes so they are sustainable and resilient under current and future climate conditions, to provide for the long-term conservation of the species* (USFWS 2011, p. III–13)*."*

The commenter does not offer any evidence that including large, contiguous blocks of late-successional forest among the purposes of the action was arbitrary or unreasonably narrow.

338. Comment Summary: Competition between the northern spotted owl and the barred owl will increase as late seral and structurally-complex forest is influenced by increased logging. The BLM northern spotted owl analysis "is severely flawed and biased towards timber interests." "An issue of particular concern is the proposal of the BLM to increase logging in scope, scale, and intensity throughout dry forests in western Oregon."

Response: The BLM disagrees with the basic claims by this commenter. As the BLM stated in the Draft RMP/EIS, "Current research provides no evidence that the BLM can manage individual forest stands to provide northern spotted owls with a competitive advantage over barred owls (Dugger *et al*. 2011 and Wiens *et al*. 2014)" (USDI BLM 2015, p. 774). Since that determination is so fundamental to the BLM analytical methods, the BLM specifically verified that statement with the subject matter experts, the U.S. Fish and Wildlife Service, and multiple northern spotted owl scientists.

The BLM also disagrees that the northern spotted owl analysis "is severely flawed and biased towards timber interests." The BLM evaluated northern spotted owl habitat and population responses to different land management strategies in terms of BLM contributions to the science-based conservation needs of the northern spotted owl, and consistency with the 2011 northern spotted owl revised recovery plan and 2012 final rule on northern spotted owl critical habitat, and evaluated and presented the results. The BLM developed the northern spotted analyses in collaboration with the U.S. Fish and Wildlife Service and Federal scientists with expertise in northern spotted owl research, analysis, and management. At the request of the BLM, three northern spotted owl scientists who work for the U.S. Forest Service, and are outside the BLM planning process, reviewed the BLM's methods, analyses, and conclusions. The BLM went to exceptional lengths to ensure that the northern spotted owl analyses were both analytically and scientifically credible, and that the BLM correctly interpreted and presented the results of those analyses.

The science on dry forest management has progressed since approval of the 1994 Northwest Forest Plan. The northern spotted owl analyses indicate that, during the next 50 years, dry forests treated with low intensity or uneven-age management prescriptions support northern spotted owl habitat development and populations almost as well as leaving these lands untreated, and better than under the Northwest Forest Plan.

339. Comment Summary: The BLM appears committed to eliminating the leave tree and wood retention standards and guidelines that provide at least some structural complexity in Northwest Forest Plan regeneration harvest units. The U.S. Fish and Wildlife Service relied upon the retention of structural legacies in harvest units over time in development of the Northern Spotted Owl Recovery Plan and in the designation of northern spotted owl critical habitat.

Response: The alternatives in the Draft RMP/EIS considered a range of approaches to "leave tree and wood retention" in regeneration harvests. The Proposed RMP includes requirements for retention of green trees, snags, and woody debris in regeneration harvests (**Appendix B** – Management Objectives and Direction).

340. Comment Summary: The State of Oregon recommends a requirement for northern spotted owl surveys in the Harvest Land Base, and those protections, at a minimum, for northern spotted owl known and historic sites within the Harvest Land Base, meet Oregon Forest Practices Act standards.

Response: Congress enacted legislation pertaining to the management of the BLM timberlands pursuant to the O&C Act which preempts state law purporting to govern administration of the O&C lands, including the Oregon Forest Practices Act. The commenter equates the Harvest Land Base allocated under the alternatives with state and private industrial forest lands managed under the Forest Practices Act. This ignores the fact that the Harvest Land Base is only one of several proposed land use allocations under each alternative, and that the reserve network under each alternative would be substantially larger than the Harvest Land Base. Specifically, the Proposed RMP would provide substantial support to northern spotted owl conservation and recovery, and continue to exceed the protections afforded to the northern spotted owl by the Forest Practices Act.

341. Comment Summary: The BLM must analyze and disclose the impacts of their activities on northern spotted owl survival and recovery, including increases in fire risk.

Response: As explained in the Draft RMP/EIS, the BLM modeled wildfire and included the effects of future wildfires in the northern spotted owl habitat modeling on all lands within the range of the northern spotted owl (USDI BLM 2015, pp. 748, 811–814, 1045–1056). The commenter identifies no error in that analysis.

342. Comment Summary: Northern spotted owl population trends continue to decline at alarming rates (Davis *et al*. 2015). Decline was steepest on study areas not managed under the Northwest Forest Plan (Anthony *et al*. 2006); thus, the downward trajectory might have been much worse without the Forest Plan. BLM needs to include this in the Final EIS.

Response: The Proposed RMP/Final EIS has included the most current information on northern spotted owl populations. Speculation about how a different management plan might have affected northern spotted owls in the past is neither possible nor relevant to this analysis. The analysis considers the cumulative effect of past actions in producing the current baseline condition for resources (USDI BLM 2015, p. 94), including northern spotted owl populations. The northern spotted owl analyses evaluated northern spotted owl future population responses under each alternative, including the No Action alternative, which assumes the continued implementation of the Northwest Forest Plan on BLM-administered lands.

343. Comment Summary: On BLM-administered lands in Oregon, the rate of old forest losses reflected by spotted owl habitat loss was more than 2 times that of U.S. Forest Service lands over a ten-year period (Table 4 of Davis *et al*. 2015). This relatively higher rate of loss on BLM lands needs to be acknowledged in the Final EIS.

Response: The commenter misread Table 4 of Davis *et al*. (2015), which does not distinguish between BLM-administered lands and U.S. Forest Service lands. In fact, Davis *et al*. (2015) provides no results specific to BLM-administered lands.

344. Comment Summary: Federal agencies assume that fire is a leading cause of habitat loss to northern spotted owls, yet few empirical studies have actually investigated spotted owl response to fire absent post-fire logging in or around owl territories. The tradeoff between fire risk reduction and owl habitat maintenance has seldom, if ever, been systematically evaluated by Federal agencies. Such simulation and empirical based studies on impacts of widespread thinning on spotted owls need to be included in the RMP. Forest treatments intended to reduce the threat of fire are more likely to cause more harm to the northern spotted owl than fire itself.

Response: The Draft RMP/EIS included the effects of wildfire and timber harvest treatments in all of the northern spotted owl analyses. The vegetation modeling incorporated the effects of wildfire and timber harvest and fuel treatments on forest stand conditions over time (USDI BLM 2015, pp. 98–102). The northern spotted owl analysis used the results of the vegetation modeling in evaluating changes in northern spotted owl habitat over time (USDI BLM 2015, pp. 1453–1455). In this analysis, the BLM did model the effects of timber harvest and fuel treatments within the alternatives, among other forest management actions, on northern spotted owl habitat over time based on empirical information on current stand conditions, the effects of timber harvest and fuel treatments on stand conditions, and habitat suitability of different stand conditions. The commenter identifies no error in this analysis.

The treatment of a stand to improve its fire resiliency commonly reduces the immediate value of the stand for northern spotted owls. However, the effects of these treatments are temporary, they typically occur in younger forest stands that are of less value to northern spotted owls, and they are intended to protect adjacent older forest stands from fire ignition in the treated stand. The Draft RMP/EIS acknowledged that hazardous fuels treatments can affect wildfire risk, but the BLM has no method to translate these changes in risk into meaningful differences in wildfire occurrence and wildfire effects for the alternatives (USDI BLM 2015, p. 212). The commenter offers no information that would allow such analysis.

Finally, the goal of fuels management under the alternatives is not limited to northern spotted owl habitat management. One of the purposes of the RMP is to restore fire-adapted ecosystems to increase fire resiliency (USDI BLM 2015, p. 10). Under all action alternatives, the management objectives for fuels management include managing fuels to reduce wildfire hazard, risk, and negative impacts to communities and infrastructure, landscapes, ecosystems, and highly valued resources (**Appendix B** – Management Objectives and Direction). Therefore, while beneficial and adverse effects to northern spotted owls are relevant in the analysis, such effects are not the only consideration in including fuel treatments in the action alternatives.

345. Comment Summary: The Final EIS should provide protections for all suitable spotted owl nesting and roosting habitat and not just the high quality habitat areas given owls will use mature forests and not just the oldest age classes (Carroll and Johnson 2008).

Response: The Draft RMP/EIS explained why an alternative that would protect all northern spotted owl habitat would be substantially similar to Sub-alternative C, which the Draft RMP/EIS analyzed in the northern spotted owl analysis (USDI BLM 2015, p. 80). Under Sub-alternative C the BLM evaluated the effects of protecting all northern spotted owl nesting-roosting habitat on BLM-administered lands and determined that it would contribute negligible added benefits to northern spotted owl conservation when compared to some other alternatives and actually performed less well with respect to owl conservation than did some other alternatives (USDI BLM 2015, pp. 746–826).

346. Comment Summary: The Final EIS should recognize that mixed-severity fires are not a threat to spotted owls in its southern range and manage for heterogeneity produced by these fires. Mixed-severity fires provide nesting and roosting habitat in low to moderate burn patches and foraging habitat in high-severity burn complexes (DellaSala *et al*. 2015). This needs to be recognized by BLM as the spotted owl appendix is out-of-step with new fire science on owl habitat.

Response: The Draft RMP/EIS modeled the *observed* effects of high-, moderate- and low-intensity wildfires in mixed severity patches on northern spotted owl habitat (USDI BLM 2015, pp. 1045–1056). The BLM has reviewed DellaSala *et al*. 2015, which presents literature reviews and policy critiques and does not include any scientific information that would alter the empirical information used in the wildfire modeling.

347. Comment Summary: We assert that Federal land spotted owl habitat modeling are not adequately incorporating the rapid loss of nesting-roosting-foraging habitat from private land clear cutting at scales relevant to existing northern spotted owls.

Response: The Draft RMP/EIS modeled habitat changes on all land ownerships within the northern spotted owl range based on observed rates specific to land classification/ownership (USDI BLM 2015, pp. 1480–1485). The commenter does not identify what habitat loss on private land they believe has not be "adequately incorporated" in this modeling.

348. Comment Summary: Impact of sudden oak death on spotted owl habitat not disclosed.

Response: The Draft RMP/EIS modeled habitat changes based on observed rates of change on all land ownerships (USDI BLM 2015, pp. 1453–1485). Although the BLM did not specifically breakout the impacts of sudden oak death, the effects of sudden oak death are incorporated among the change elements identified in the GNN data. It would not improve the quality of the analysis or provide for a reasoned choice among the alternatives to break out specifically the effects of sudden oak death on northern spotted owl habitat in the modeling.

349. Comment Summary: It is unlikely any of the BLM's alternatives will provide the harvest levels projected for them given the spotted owl recovery plan and critical habitat designation, which are likely to result in restrictions greater than disclosed in the Draft RMP. It is unknown what level of constraint will result at project level consultation in terms of avoidance, reduced acreage for harvest, or harvesting at lower intensities than stated in RMP.

Response: The northern spotted owl revised recovery plan is advisory. That said, the Draft RMP/EIS analyzed the effects of the alternatives in the context of the recommendations in the northern spotted

owl revised recovery plan (USDI BLM 2015, pp. 746–818). Consistent with Section 7(a)(2) of the ESA, the BLM will ensure, in consultation with the U.S. Fish and Wildlife Service, that any action by the BLM will not result in the destruction or adverse modification of designated critical habitat for the northern spotted owl. The Draft RMP/EIS specifically evaluated the effects of the alternatives on designated critical habitat for the northern spotted owl (USDI BLM 2015, pp. 819–826).

The BLM will also consult with the U.S. Fish and Wildlife Service on individual projects implemented under the approved RMP that may affect northern spotted owls or their critical habitat. Unless the Service finds jeopardy or adverse modification and offers a reasonable and prudent alternative, the BLM would not be constrained from implementing actions under the RMP.

The commenter provides no information or evidence to support their speculation that there will be some unspecified future restrictions on timber harvest. Furthermore, the commenter does not identify any change the BLM should make to the analysis in response to their asserted uncertainty.

350. Comment Summary: If BLM were to adopt a management plan that merely conformed to the existing regulatory policies of the spotted owl recovery plan and critical habitat, the levels of sustainable harvest would be lower than any alternative BLM has analyzed. The BLM analysis has established that the RMP, if fully adhered to, will have a substantial impact on sustained-yield management on O&C lands that was not previously revealed publicly.

Response: The commenter does not specify what alternative they believe would conform to the "existing regulatory policies of the spotted owl recovery plan and critical habitat" or how such an alternative would differ from the alternatives analyzed in the Draft RMP/EIS. By implication, the commenter is asserting that the alternatives analyzed in the Draft RMP/EIS would not conform to the northern spotted owl revised recovery plan or the critical habitat rule. Based on the analysis in the Draft RMP/EIS of the effects of the alternatives on northern spotted owls (USDI BLM 2015, pp. 746–826), the BLM does not agree with this implied assertion. The commenter does not explain the basis for their supposition that such an alternative would have a lower level of "sustainable harvest" than the alternatives analyzed in the Draft RMP/EIS. The alternatives analyzed in the Draft RMP/EIS would result in sustained-yield harvest levels that would range from 120 MMbf to 486MMbf per year. These alternatives cover the full spectrum of reasonable alternatives to accomplishing the stated purpose and need for action.

351. Comment Summary: The BLM did not disclose the extent of spotted owl critical habitat and the degree it overlays the Harvest Land Base.

Response: The Proposed RMP/Final EIS has added the acreage of designated critical habitat within the Harvest Land Base under each alternative (see the Wildlife section of Chapter 3).

352. Comment Summary: All the action alternatives analyzed in the RMP DEIS will eliminate reserves or allow logging within the reserves that currently serve as habitat for the Northern Spotted Owl. The No Action Alternative – compliance with the Northwest Forest Plan – would result in the greatest increase in large blocks of suitable habitat by 2050. The RMP EIS fails to discuss or consider any of the scientific studies finding that further loss of owl habitat may drive the northern spotted owl to extinction. Sustainable Ecosystem Institute, Scientific Evaluation of the Status of the Northern Spotted Owl (2004).

Response: The commenter mischaracterizes the action alternatives in the Draft RMP/EIS. None of the action alternatives would "eliminate reserves." In fact, all of the action alternatives would allocate more acres to the Late-Successional Reserve than the No Action alternative. The action alternatives include a range of approaches to management within reserves, but most, including the Proposed RMP, would allow silvicultural treatments within the Late-Successional Reserve comparable to the approach in the No Action alternative. The commenter is mistaken about the effects of the No Action alternative; the Draft RMP/EIS analysis verified that the No Action alternative would support the development of large habitat blocks no better than any other alternative and, in the dry forest, would support northern spotted owl conservation less well than several other alternatives (USDI BLM 2015, pp. 746–764). The commenter does not identify any error in that analysis. The Draft RMP/EIS cited relevant studies and scientific information related to the effects of habitat changes on northern spotted owl populations (USDI BLM 2015, p. 774). The only specific study that the commenter suggests is cited throughout the Draft RMP/EIS analysis of the northern spotted owl (e.g., BLM 2015, pp. 747, 749, 751, 764).

353. Comment Summary: A large block strategy will not protect owls and aid in the recovery of owls in Southern Oregon. A finer scale approach to recovery and protection is needed instead of a large block reserve for the dry forest. It appears that the RMP analysis of habitat, includes private lands as contributing to NSO habitat. You cannot count on private land to meet the obligation of habitat for spotted owls. This is a flaw in the analysis assumptions. On the Medford District an owl-by-owl strategy is needed rather than a large block design.

Response: The Draft RMP/EIS identified that maintaining large, contiguous blocks of late-successional forest is a part of the purpose for the action, based on scientific information, the results of previous analyses, and the recommendations in the northern spotted owl revised recovery plan (USDI BLM 2015, pp. 7–8). Although scientists first identified large blocks of older forest as a conservation need of the northern spotted owl in 1990, ongoing science has reaffirmed the importance of such large blocks. The Draft RMP/EIS cited the most recent research in this area, which validates the importance of older forest conditions and managing for large blocks of unfragmented older forest (USDI BLM 2015, p. 774). The commenter does not offer any evidence that including large, contiguous blocks of late-successional forest among the purposes of the action was arbitrary or unreasonably narrow. Regarding private land contributions to northern spotted owl conservation, the Draft RMP/EIS stated that the analysis would evaluate the BLM's contribution to a western Oregon landscape that supports northern spotted owl conservation (USDI BLM 2015, p. 749). The BLM evaluated the contribution of private lands to northern spotted owl recovery because they affect all management outcomes. As the BLM analyses verify, the private lands contribute relatively little to northern spotted owl conservation, and that affects how the cumulative effect of how the alternatives would contribute to northern spotted owl conservation and recovery.

The commenter asserts "an owl-by-owl strategy is needed rather than a large block design." Such as strategy would not be a reasonable alternative; the purpose and need for the RMP revision specifically identified the purpose of maintaining large, contiguous blocks of late-successional forest (USDI BLM 2015, pp. 7–8). Furthermore, the Background section of the Northern Spotted Owl section in Chapter 3 details the continuing conservation need of large blocks of nesting, roosting, and foraging habitat. An alternative that would not include "a large block design" would not respond to the purpose and need for action and would not address the conservation needs of the northern spotted owl.

354. Comment Summary: It is unclear from the DEIS, but is NRF habitat now being defined as only multilayered, multi-species canopy, diameter over 30 inches DBH and canopy cover over 60% and

decadence components? Spotted owls can and do nest in forests over 80 years old, even if they have not yet developed full decadence components present in unique old-growth forests like RA 32 habitat.

Response: The BLM is not redefining northern spotted owl NRF (nesting-roosting-foraging) habitat. The Draft RMP/EIS cited the description of nesting-roosting-foraging habitat in Thomas *et al*. (1990) and subsequent research that confirmed that this description remains valid (USDI BLM 2015, p. 749). This definition does not use an age criterion nor does the analysis in the Draft RMP/EIS, and is broader than the description of 'high-quality' habitat in Recovery Action 32. For the purposes of modeling changes in northern spotted owl habitat over time, the BLM modeled northern spotted owl relative habitat suitability over time (USDI BLM 2015, pp. 1453–1485). This modeling did not classify stands as simply habitat or non-habitat, but modeled relative habitat suitability from 0 to 100, with higher numbers signifying better habitat value. The commenter does not identify any error in this analysis.

355. Comment Summary: Spotted owl habitat suitability is rated on a 0 to 100 scale (higher numbers indicating better habitat) and the scale is based upon canopy cover, mean tree diameter, and slope. This new metric raises many questions. Exactly what variables were included, and how are they weighted? Were legacy trees accounted for or secondary older cohorts accounted for and how? Additionally, the BLM divided owl habitat into four categories 'strongly selected for', 'selected for', 'selected against', and 'strongly selected against.' I believe this means that a 'strongly selected for' area had a high proportion of northern spotted owl nest locations based on the relative habitat suitability value. It would be beneficial to the public and our organization to see how this new metric rates against the more simple analysis of stand age.

Response: The Proposed RMP/Final EIS has added information to explain further the habitat suitability modeling (**Appendix T** – Northern Spotted Owl).

356. Comment Summary: The BLM is claiming in the RMP that northern spotted owl declines have little to do with loss of available late seral and structurally-complex forest habitat. This assumption is simply not validated by the best available science.

Response: The commenter appears to be confusing the threats that have caused past population declines for the northern spotted owl with the results of the analysis of the future effects of the alternatives. The revised recovery plan clearly stated that the northern spotted owl was listed under the ESA due to loss of spotted owl habitat because of timber harvesting and was exacerbated by other events. In the Draft RMP/EIS, the analysis of northern spotted owl habitat incorporated the aggregate effect of past timber harvest into the baseline description of current habitat conditions. The analysis in the Draft RMP/EIS evaluated the effects of the alternatives on future amounts and configuration of habitat. The analysis in the Draft RMP/EIS also modeled the effect of these future changes in habitat and other factors, such as barred owl interactions, on northern spotted owl population responses. The Draft RMP/EIS concluded that habitat changes on BLM-administered lands, under the different alternatives, had little discernable effect on northern spotted owl population responses due to the effects of competitive interactions between northern spotted owls and barred owls (USDI BLM 2015, pp. 746–826). That determination is consistent with scientific observation and modeling by other subject matter experts throughout the northern spotted owl's range. The commenter does not identify any error in that analysis and does not cite any scientific information that is inconsistent with the information in the Draft RMP/EIS.

357. Comment Summary: A reference analysis should be performed to illustrate the extent to which the encounter rate of barred owl and northern spotted owl affects management strategy outcomes.

Response: The Draft RMP/EIS did provide an analysis of the effects of the alternatives at different barred owl encounter rates. Based on that analysis, the Draft RMP/EIS concluded that habitat changes on BLM-administered lands, under the different alternatives, had little discernable effect on northern spotted owl population responses due to the effects of competitive interactions between northern spotted owls and barred owls (USDI BLM 2015, pp. 774–804).

358. Comment Summary: Mark it well: historic, ongoing, and widespread habitat destruction is the root cause of the endangerment of the NSO. This premise is as inarguable as it is certain. For the authors of the DEIS to throw up their hands, so to speak, and declare that '…the BLM has no opportunity through habitat management in the Coast Range to reduce risks to the northern spotted owl during the next 50 years…' goes beyond cavalier and enters the realm of the outrageous! The BLM must assume the NSO's ultimate recovery across the decision area, if not the entire planning area.

Response: The analytical conclusions in the Draft RMP/EIS are supported by scientifically and analytically credible modeling, and are consistent with empirical evidence and multiple, independent expert conclusions. The analysis in the Draft RMP/EIS evaluated the effects of the alternatives on future amounts and configuration of habitat. The analysis in the Draft RMP/EIS also modeled the effect of these future changes in habitat and other factors, such as barred owl interactions, on northern spotted owl population responses. The Draft RMP/EIS concluded that habitat changes on BLM-administered lands, under the different alternatives, had little discernable effect on northern spotted owl population responses due to the effects of competitive interactions between northern spotted owls and barred owls (USDI BLM 2015, pp. 746–826). The commenter observes this analytical conclusion, but identifies no error in the analysis.

Analysis of effects in an EIS must address those effects that are reasonably foreseeable (40 CFR 1508.8). While the "ultimate recovery" of the northern spotted owl is desirable from both a legal and policy standpoint, it is by no means reasonably foreseeable, as evidenced by the discussion of the current population condition in the Draft RMP/EIS. The commenter's assertion that the BLM must "assume the NSO's ultimate recovery" disregards the current condition and trend of the northern spotted owl population and the results of the analysis in the Draft RMP/EIS. As noted in the analysis in the Draft RMP/EIS, the outcomes for the northern spotted owl population under the No Timber Harvest reference analysis at current barred owl encounter rates would be substantially the same as the alternatives (USDI BLM 2015, pp. 783–804). In that context, it is unclear how the commenter intends that the BLM must "assume the NSO's ultimate recovery."

359. Comment Summary: The BLM must manage habitat to allow for northern spotted owl and barred owl co-existence and in doing so must protect all habitats. Competition between the spotted owl and the barred owl will increase as late seral and structurally-complex forest is influenced by increased logging. Further fragmentation and late seral habitat degradation will provide an advantage to the barred owl, who can utilize slightly more altered forest habitat.

Response: Currently there is no substantive empirical evidence that northern spotted owls would be able to coexist with barred owls in the future as the effects of competitive interactions on the northern spotted owl are continuing to increase, and the commenter offers no such evidence.

The Draft RMP/EIS analyzed the effects of a No Timber Harvest reference analysis, in which the BLM forecast northern spotted owl habitat and population responses to a hypothetical management scenario in which the BLM conducted no timber harvest. That analysis concluded that protecting all habitats, in the absence of barred owl control, would not substantively curb the continued northern spotted owl population decline (USDI BLM 2015, pp. 746–826). The commenter identifies no error in that analysis.

360. Comment Summary: Effects to northern spotted owl foraging habitat have not been specifically addressed.

Response: The BLM did not specifically address foraging habitat because, unlike nesting-roosting and dispersal habitats: (1) there is no accepted description of foraging habitat in terms of stand age, stand structure, canopy cover or other metrics the BLM can model, and (2) there is no quantitative definition of the necessary amount of foraging habitat in terms of patch size, patch spacing, density on the landscape, where it needs to be and when it needs to be there. With no credible metric of how much is enough or other benchmarks, the BLM could not state that the contribution of any one alternative would be adequate or would not be adequate to contribute to the conservation and recovery of the northern spotted owl. Therefore, an analysis specifically evaluating the amount of foraging habitat would not improve the quality of the analysis or provide for a reasoned choice among the alternatives. This is in sharp contrast to nesting-roosting and dispersal habitats, which have clear, science-based thresholds of adequacy.

361. Comment Summary: In displaying the results of its HexSim model, the BLM provides no estimates of variance for any of the modeled northern spotted owl population numbers. It's important to provide some measure of variation in these estimates from HexSim models.

Response: The variance associated with the HexSim model results does not alter the basic analytical conclusions in the Draft RMP/EIS. Including variance measures for the results on the HexSim model would not improve the quality of the analysis or provide for a reasoned choice among the alternatives.

362. Comment Summary: How did the BLM come to the conclusion that northern spotted owl populations in the western Cascades would be stable? Stability is a description of the trend, not total numbers.

Response: The commenter mischaracterizes the analytical conclusions in the Draft RMP/EIS. The Draft RMP/EIS stated that the modeling indicated that the northern spotted owl population likely would persist in the western Cascades during the next 50 years; the Draft RMP/EIS clearly showed that the population is not stable and is not expected to stabilize without a reduction in the barred owl encounter rate (USDI BLM 2015, pp. 787, 792).

Oregon Spotted Frog

363. Comment Summary: Analysis and survey data are needed for the Oregon spotted frog because it has been proposed for Federal listing and proposed critical habitat identified.

Response: The Draft RMP/EIS analyzed the effects of the alternatives on the amount of habitat for Oregon spotted frog and its proposed critical habitat. The Proposed RMP/Final EIS has included additional information on the current conditions and analyzed effects of the alternatives on the Oregon spotted frog and its proposed critical habitat (see the Wildlife section of Chapter 3).

Western Snowy Plover

364. Comment Summary: The State recommends changes in OHV use and Recreation Management Area (RMA) designations in the RMP that would not increase activities in snowy plover habitat.

Response: The BLM would allocate snowy plover habitat and critical habitat as *limited* to public motorized access under the Proposed RMP. However, the Proposed RMP would specifically direct the BLM to not authorize or construct additional roads or trails in within snowy plover habitat or designated critical habitat. Furthermore, ACEC management direction under the Proposed RMP would preclude additional impacts to snowy plovers resulting from public motorized vehicle use (see the Wildlife section of Chapter 3 and **Appendix B** – Management Objectives and Direction).

365. Comment Summary: To protect snowy plovers adequately at the two sites where BLM lands support the species (the New River ACEC and the Coos Bay North Spit [CBNS]), the Service recommends the BLM include a set of conservation measures in its RMP.

Response: The Proposed RMP includes management direction intended to conserve snowy plovers. The Proposed RMP would provide direction to continue activities that restore or maintain snowy plover nesting habitat, as the Coos Bay District has been implementing (e.g., mechanical treatment of plowing of European beach grass and augmenting nesting grounds with oyster shells). The Proposed RMP also includes direction to avoid disruption of plover nesting behaviors through restricting the timing and location of beach access or activities (see the Wildlife section of Chapter 3 and **Appendix B** – Management Objectives and Direction).

Issues Considered but not Analyzed in Detail

366. Comment Summary: The Siskiyou Mountain Salamander conservation agreement, to which the BLM is a party to, indicates that "significant changes in Forest Service or BLM land-use allocation within the area of the conservation strategy" must trigger "immediate review of the Conservation Agreement." This threshold would be triggered by implementation of the RMP as outlined in the DEIS and the conservation agreement must be revisited and amended to either reduce logging and ground disturbance impacts or proceed towards listing of the SMS due to new threats from BLM logging that far exceeds the standards of the NWFP and therefore the assumptions built into the Conservation Agreement and Conservation Strategy.

Response: The Proposed RMP would include management direction to manage the Siskiyou Mountains salamander consistent with the Conservation Agreement for the Siskiyou Mountains Salamander *(Plethodon stormi)* in Jackson and Josephine Counties of Southwest Oregon; and in Siskiyou County of Northern California (August 17, 2007), as amended and as long as that agreement is in effect. The option to review and potentially amend this conservation agreement is an independent process that is outside of the scope of the RMP revision.

Wild and Scenic Rivers

367. Comment Summary: Rough and Ready Creek should be found eligible for potential inclusion into the National Wild and Scenic Rivers System.

Response: The BLM has determined that Rough and Ready Creek is not eligible for potential inclusion in the National Wild and Scenic Rivers System based on the lack of outstandingly remarkable values present within the river corridor. The BLM completed the eligibility determinations and subsequent suitability studies for all potential Wild and Scenic Rivers in the decision area as part of the 1995 RMPs. As part of this RMP revision, each BLM district re-validated all river segments that the BLM had previously found eligible or non-eligible for potential inclusion into the National Wild and Scenic Rivers System. The eligibility determination that was performed by the Medford District in 1992 for Rough and Ready Creek was re-validated and determined as non-eligible based on the lack of outstandingly remarkable values present within the river corridor being studied.

368. Comment Summary: The BLM should not designate the Rogue River as a Wild and Scenic River. Designation of this river and the private lands along the river corridor would violate private landowners' rights.

Response: The BLM has not proposed to recommend any non-BLM-administered lands, including privately owned lands, for inclusion into the National Wild and Scenic River System anywhere in the decision area. The land acres considered under this analysis comprising the Wild and Scenic River corridor along the 63 miles of the Rogue River total 754 acres, all of which are BLM-administered lands. The 63-mile stretch of the Rogue River and the associated 754 acres of BLM-administered lands underwent eligibility and suitability reviews as part of this RMP revision. The details of the eligibility and suitability study process for the Rogue River is documented in Section 2, pp. 7–9 of the Wild and Scenic Rivers Suitability Report for Southwest Oregon (BLM USDI 2015). The BLM followed the methodology to determine whether this eligible river would meet the 13 suitability criteria to be appropriate to recommend for inclusion in the National System and found the Rogue River to be suitable to recommend for potential inclusion. The Rogue River suitability factor assessment is contained in the Wild and Scenic Rivers Suitability Report (pp. 121–139).

The alternatives consider a range of requisite protections and recommendations for inclusion into the National Wild and Scenic River System. Under the No Action alternative, the Rogue River would receive protections of the outstandingly remarkable values and tentative classification identified until the next land use planning process assessed the suitability of Wild and Scenic Rivers. Under Alternatives B, C, and D, and the Proposed RMP, the BLM would recommend the Rogue River for inclusion into the National Wild and Scenic River System. Under these alternatives and the Proposed RMP, the 63 miles and 754 acres of BLM-administered lands would receive interim management for the outstanding remarkable values and tentative classification until Congress either designates the river or releases it for other uses. This interim management would apply only to BLM-administered lands and would have no bearing on private land management.

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